

ARCHITECTURAL  
RECORD

NOVEMBER 1940

**BUILDING TYPES (HOUSES IN CONTROLLED DEVELOPMENTS)**

**NEWS & TRENDS**

# *Not a Penny for Repairs in* **47 YEARS**

*Record of copper cresting on Home Life Insurance Building leads to re-roofing with 20-oz. Anaconda Copper . . . and a saving of 25 tons in weight!*

When horse-cars labored down Broadway and "Gentleman Jim" Corbett wore the heavy-weight crown, a new building reared its copper crest along Manhattan's budding skyline; the year, 1893. Since then, not one cent has been expended for repairs to the copper cresting. Such a record naturally led to the choice of copper to replace the old tile roof.

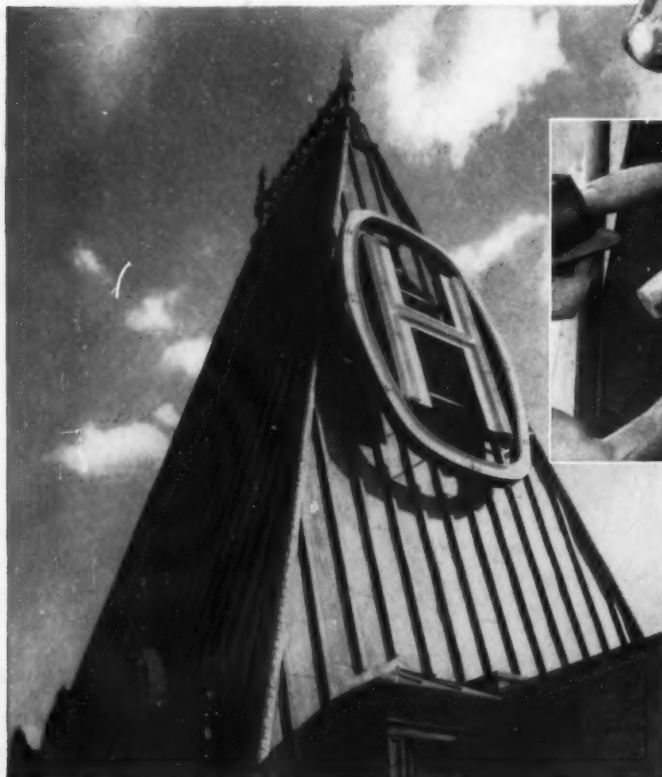
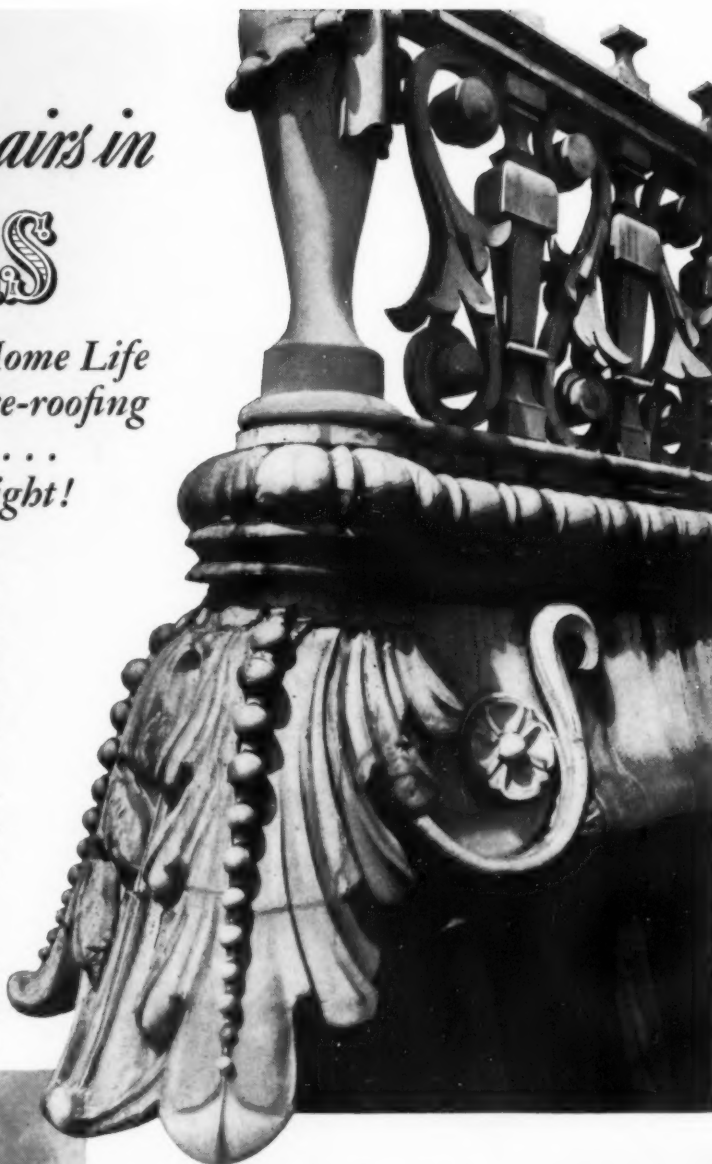
#### *Unique Installation*

Interesting is the fact that not a bit of solder was used in installing the new copper roof; also that Nicholson & Galloway, Inc., did both the cresting job in 1893 and the new batten-seam roof in 1940!

#### *Specify Anaconda Copper*

You can't go wrong with Anaconda Copper. Specify it for light weight, good appearance, durability. In the long run, it saves money.

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The Home Life Insurance Company, now in its 81st year, built New York's first fire-proof, all-steel constructed building in 1893—at 256 Broadway. The original copper cresting is still in good condition after 47 years of rain, sleet, snow and burning sunshine.

(At left) 20-oz. crimped Anaconda Copper batten-seam roof recently installed without solder on this roof by Nicholson & Galloway, Inc., New York. The architect was Samuel R. Bishop, New York.



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# ARCHITECTURAL RECORD

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## IN THE RECORD NEXT MONTH

SPECTACULAR ADVANCES in illumination notwithstanding, the problem of *integrating* natural and artificial light—for a balanced 24-hour cycle of controlled illumination—remains largely unexplored. In December, the RECORD presents the first of two studies on this subject, treating such basic elements as: brightness, color, location, plasticity, distance, time change, etc.; showing how they in principle affect human vision and may, by proper integration, effect balanced light around the clock, throughout the year.

Another feature in December will present the plan (developed largely by students at the College of Architecture, U. of Southern Calif.) for the improvement of parking facilities in Hollywood shopping-center, and tell how the Hollywood Chamber of Commerce lined up merchants and property owners in near-to-perfect co-operation in these measures for vital trade and rental resuscitation.

New Buildings, in December, will include: a boys' club in New York City, providing flexible design and advanced equipment for a possible membership of 2500; a mortuary in California, successfully combining functional unobtrusiveness with maximum efficiency; a community center in New Jersey, planned for the leisure-time needs of 5000 oil-company employees; a monastery chapel in Massachusetts, by an architectural firm internationally famous for its churches; and a municipal building in Illinois, making extensive use of glass in many of its most recent forms. There will also be a portfolio of new houses; the residential-details section will deal with conservatories.

Building Types will have to do with Office Buildings—New and Remodeled. Among the six examples of such work selected for case-study presentation is the Brazilian Press Association Building in Rio de Janeiro—a top-flight contender for hemisphere honors with any comer in this field. Time-Saver Standards will provide data on commercial telephone installations and flashings for multistory masonry walls.

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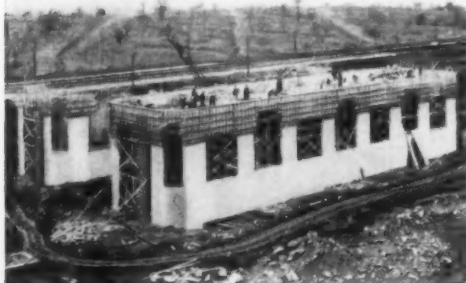
HERE'S A WAY TO SPEED UP CONSTRUCTION

## CONCRETE READY FOR 560 TONS OF STEEL IN 70 HOURS



● Foundation for new sintering plant, Wenonah Mines, Alabama. Two of the sixteen steel silos are shown in place on the concrete top deck. Only 70 hours after this Atlas High-Early concrete deck was placed, it was strong enough to support the heavy stiff leg derrick and to allow erection of the 560 tons of steel silos to begin.

● Slab of top deck being placed with Atlas High-Early concrete. Engineer: A. W. Beck, Tennessee Coal, Iron and R. R. Co. Contractors: Rust Engineering Co., Pittsburgh, Pa.



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ARCHITECTURAL RECORD

# HOUSES

## IN CONTROLLED DEVELOPMENTS



### DEED RESTRICTIONS THAT AFFECT HOUSES IN PLANNED NEIGHBORHOODS

By FREDERICK LAW OLMSTED, Fellow, A.S.L.A.

### THE BENEFITS OF CONTROLLED NEIGHBORHOOD PLANNING

By SEWARD H. MOTT,

Director, FHA Land Planning Division

### NEEDED: WIDER APPLICATION OF ARCHITECTURAL CONTROL

By CHARLES H. CHENEY,

AIA, Consultant in City Planning

### PROGRESS REPORTS FROM ARCHITECTS ACTIVE IN THE FIELD

By 1. HOLLIS JOHNSTON, AIA. 2. EDWARD D. PIERRE, AIA. 3. MARCEL VILLANUEVA, AIA. 4. JOS. TH. JOESLER, AIA. 5. DONALD McCORMICK, AIA. 6. JOHN A. AHLERS, AIA. 7. BURTON A. BUGBEE

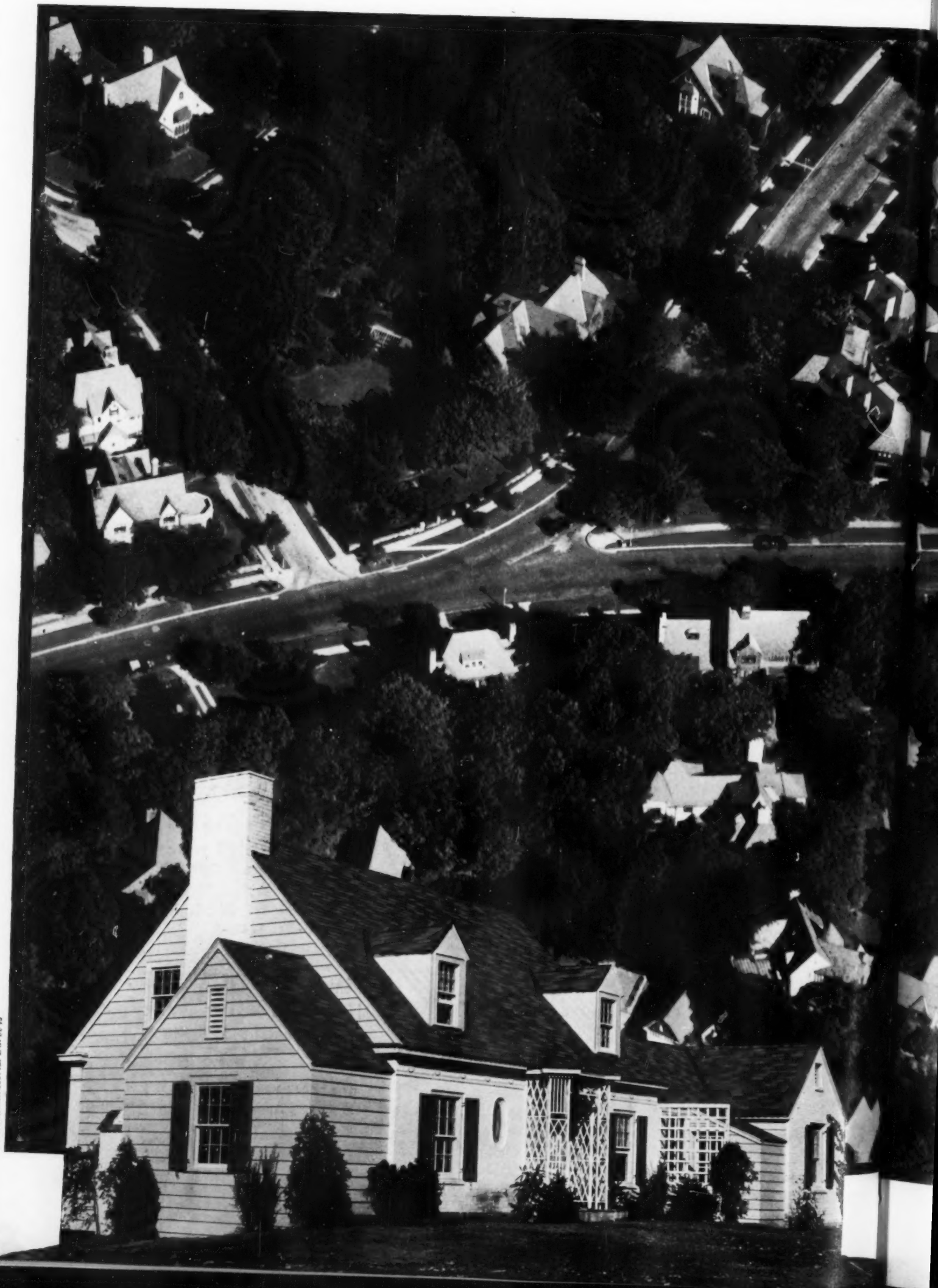
### REALTY EYES THE ARCHITECT AND FINDS IT NEEDS HIM IF—

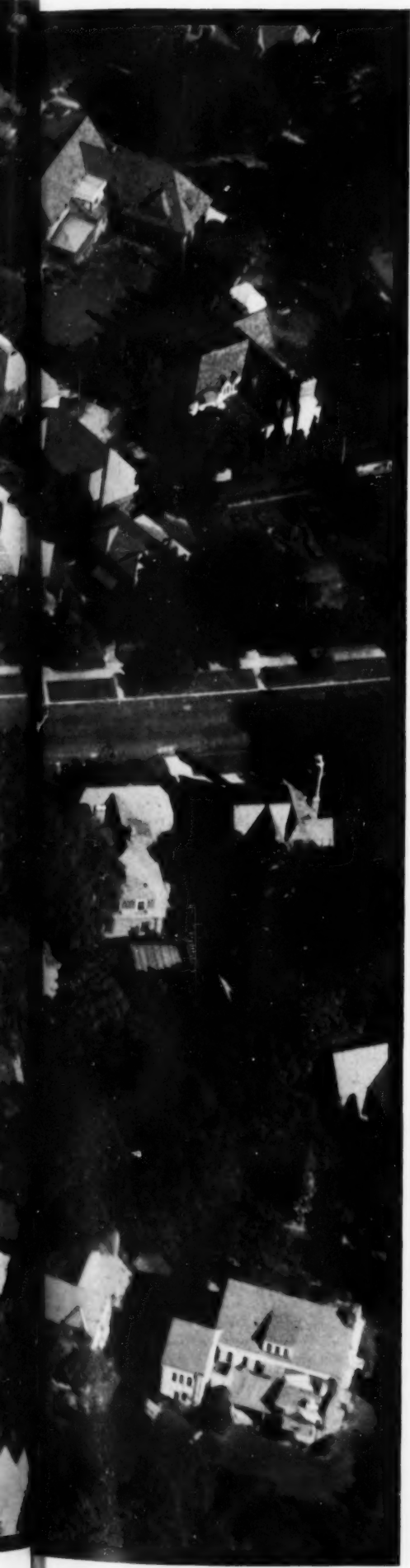
By EMERSON GOBLE,

Editor, National Real Estate Journal

### PORTFOLIO HOUSES IN CONTROLLED DEVELOPMENTS

# BUILDING TYPES





## ★ FOREWORD

Whatever her actual need or potential capacity, America produced in 1939 approximately 200,000 single-family dwellings. The widely varying conditions under which these units were produced are matched only by the widely varying position of the architect in each case—a position which runs the full gamut from no position at all to complete control. The reasons for this anomalous situation are complex; they may be attacked, but they will not be eradicated, by moralizing.

However difficult generalizations about the "home building industry" may be, three facts warrant close scrutiny by the architect:

1. MORE SINGLE-FAMILY HOUSES ARE BEING BUILT FOR RENT OR SALE THAN FOR OWNERS. The percentage of all single-family houses built for rent or sale (as against those built for owners) is steadily increasing. In 1932 the figure was 39%; by 1937 it had risen to 53%; and for 1939 it stood at 57%.

2. MORE SINGLE-FAMILY HOUSES ARE BEING BUILT IN GROUPS. The percentage of all single-family houses built in groups of two or more was 33% in 1937; it had increased to 38% in 1939.

3. MORE SINGLE-FAMILY HOUSES ARE BEING BUILT IN GROUPS OF TWO OR MORE. The percentage of single-family houses for rent or sale built in groups of two or more was 60% in 1937; by 1939 it had risen to 67%.

These three statistics merely serve to document the important fact that the economies inherent in rationalized production are as attractive in the residential field as in any other, offering the same irresistible incentive to larger and more centralized operations. It is not accidental that the architectural expression of this economic trend is a growing number of "planned communities", "controlled developments", subdivisions, etc. Even in the case of houses designed by architects for specific clients, more and more of these are being planned within the restrictions and controls of such preplanned neighborhoods.

This trend is by no means wholly negative. On the contrary, it offers the prospect of lower unit cost, better planned houses, more stable communities. It finds reinforcement from many sources—alert realtors, active manufacturers, lending agencies, and the FHA. Most important of all, it seems to have the support of the house-buying public.

Fortunately (or not) the future of the trend will not be determined on esthetic merits alone. For investigation will show that it is not (as some of the more critical of the profession insist) so much a case of the public's "lacking taste" as it is of the public's "lacking money" to pay more than \$7,000 or less per unit (the price at which about 73% of all houses built will sell) and "lacking proof" that architects will either design the house they desire or help them to save money.

For the individual architect, this trend may offer difficulties, but they are far from insurmountable. It is easy to understand why he protests against a trend which often works a hardship on him as an individual; but it is strange that his profession generally appears to ignore the constructive possibilities in this important development.

This failure may be due to the fact that, to grasp the new potentials, new and (for the architect) strange relationships are implied. That these relationships are not unattractive—to the architect, to the builder, or to the consumer—is attested by many architects who have engaged in such co-operative effort with marked success. But each aspect of the field involves specialized capacities that differ from those required in ordinary practice. And each requires group effort instead of solo flight.

To plot the extent of this field, the RECORD queried a number of these architects whose work in it ranges from the design of individual houses for individual clients in a controlled development to complete control of the whole development. Their progress reports appear on the following pages. To supplement the professional viewpoint, we also include analyses by well-known landscape and city-planning authorities, as well as an objective discussion by an outstanding spokesman for real estate.

# DEED RESTRICTIONS THAT

By FREDERICK LAW OLMSTED,

Fellow, A.S.L.A.

ALTHOUGH THIS FIELD is sharply distinguished legally from that of controls imposed by governmental units, such as Building Codes and Zoning Ordinances, in practical effects the two fields largely overlap and react upon each other.

One peculiar value of the former lies in the almost unlimited legal freedom it offers for widely diverse experiments, undertaken on private initiative, in controlling features of planned communities that are not satisfactorily controllable by governmental regulations at any given time and place. When successful from a public standpoint, such experiments tend to be followed by an expansion of municipal regulations in the same directions—up to the limits of what increasingly liberal courts will accept as constitutional.

Effective public zoning regulations—long in use in some European countries—became legally possible in the United States only after much experimentation with similar controls, imposed by deed in many of our better residential subdivisions, had familiarized the American public and the courts with ideas common to both systems. And the rapid developments in the technique of public zoning as applied to all sorts of American conditions, following the initial New York Zoning Law of 1914, were promptly reflected in improved technique of private restrictions.

Historically, restrictions by deed have been used sporadically for centuries: e.g., in 1749, in Philadelphia, requiring buildings to be of brick or stone, etc. But the first direct forerunner of the modern highly restricted subdivision in the United States (according to Monchow's monograph\*) was in 1871, in the Riverside development near Chicago, designed by Olmsted and Vaux. For the next 30-odd years the device was used in the better sort of planned residential subdivisions with increasing frequency, in a groping, experimental, and often casual way. During the first decade of this century it was applied, more

systematically and after much more thorough analysis, in a number of notable large developments (e.g., by the Roland Park Company of Baltimore, and by J. C. Nichols for the Country Club District of Kansas City) and was widely recognized among realtors to be important as a "talking-point" for salesmen, even where it was not taken very seriously otherwise. Soon its use, in one form or another, good, bad, and indifferent, became general among developers who aimed at what they believed to be a discriminating market of lot buyers.

Definite trends of development in the techniques of restrictions are not very clearly marked until well after 1900. It should be borne in mind that they have developed, and will continue to develop, by trial-and-error methods, in response to diverse and sometimes conflicting motives; account must be taken of an extraordinary diversity of technical factors in the fields of salesmanship and finance no less than in those of architecture, landscape architecture, engineering, and general community planning from the physical standpoint.

## TYPES OF RESTRICTIONS

The more important past trends and present practices in the restrictions with which this article is particularly concerned are outlined below. These restrictions fall broadly into two major classes: (1) those that control the *kinds of use* to which lots may be put:

- (a) by prohibiting some kinds of use;
- (b) by requiring other kinds of use to conform to certain regulations and limitations.

(2) those that control location and design of *physical improvements and alterations* on any lot, for whatever kind of use:

- (a) by explicit regulations stated in advance of purchase;
- (b) by requiring that plans be submitted to an agency which has some degree of discretionary authority to approve or disapprove, and to prohibit execution of properly disapproved plans.

Roughly speaking, that is about the order in which the various kinds of restrictions have come into use and have

\* The Use of Deed Restrictions in Subdivision Development, by Helen C. Monchow, published in Chicago by the Institute for Research in Land Economics and Public Utilities, 1928.

# AFFECT HOUSES IN PLANNED NEIGHBORHOODS

been most actively evolved.

## (1) Prohibited Uses

**(1a) Nuisances and quasi-nuisances:** Practically every set of neighborhood restrictions from the 1870's to the present has included so-called "nuisance clauses," intended to prohibit things considered patently obnoxious and unnecessary (whether technically "nuisances" by Common Law or not), and against the occurrence of which the prospective lot purchasers have been thought to need assurance. These clauses normally embrace two parts. One is a very general prohibition, widely inclusive but subject to argument in specific application; e.g., against "any noxious trade, business, or use whatsoever." The other is a detailed enumeration, confessedly incomplete but sometimes quite extensive, of specific uses prohibited because of their objectionable inappropriateness in the neighborhood. These lists are protean in their variety. They depend largely on the particular *bêtes noires* of a given time and place. As such they are of only indirect concern to architects; and a general analysis of them is impossible here. It may be of interest to note that prohibition of advertising signs (other than certain necessary signs limited in size) seems to have appeared first about 1905; and that beginning in the 1880's there are occasional prohibitions, in detached-house residential districts, of walls, fences, or hedges exceeding rather low specified heights (thus covering "spite fences"). These might be regarded as the germ of the highly specialized and carefully designed restriction or easement used in a number of cases after 1920 prohibiting structures or plantations on certain lots of such height and location as would obstruct specified views of great importance to the value of certain other lots.

**(1b) Definition of permissible uses:** This method came into use in the 1870's concurrently with (1a), and has been generally retained with increasing emphasis and elaboration. The earlier definitions were often full of loopholes for insinuating uses wholly unexpected and undesirable in the neighborhood; e.g., such broad terms as "dwellings," when the type of use actually contem-

plated as a norm was for detached single-family dwellings accompanied by certain kinds of accessories. The better sets of restrictions have made the definitions progressively more exact. But loose definitions have too frequently persisted, in part through inconsiderate copying of old restrictions from subdivisions that have been successful for reasons other than the phraseology of their restrictions, and in part deliberately by some developers, to provide an eyewash of restrictions for unsophisticated customers that would not greatly tie the developer's hands in later sales.

## (2) Regulations Controlling Permissible Uses

By the 1880's "use regulations" by covenant first began to appear. These embodied certain elements which much later became familiarly characteristic of zoning ordinances. They have continued to increase in number, in complexity, and (among the better sets of restrictions at least) in their effectiveness as instruments of good planning for neighborhoods. Chief of these elements are: (a) provision, in different parts of an extensive neighborhood, for two or more distinct uses that are in some respects mutually repugnant if intermingled, but desirably supplement each other if suitably segregated (e.g., local store uses and differing types of residential uses); and (b) definition and limitation of the "accessory uses" more or less customarily incidental to a given primary use that are to be permitted on individual lots (e.g., garages, stables, keeping of domestic animals, etc.). Especially notable has been the increasingly detailed classification and definition of different sorts of residences allowable in a particular area (single-family detached, semi-detached, etc., including numerous subclasses of multiple dwellings). The intention may be to exclude certain classes entirely, or to enforce local segregation of them, or to permit intermingling of some of them under stated conditions. The number and complexity of the pieces of legal and administrative machinery available for such control by restriction over uses of lots and over local distribution of types of use has tended constantly to increase, and their effects to be more detailed and precise.

On the whole the several parts of this machinery have tended to become more nearly standardized in their applicability to similar conditions in widely separated localities. But the results toward which this machinery is directed, in particular cases, and, therefore, the selection of which parts of it to use, remain as diverse as the local conditions of different communities and as the purpose and skills of different planners.

## (2a) Pre-determined controls (within limits) on design and location of buildings:

The earliest of these regulations to appear were building-line "setbacks" from the streets, long antedating the 1870's and quite customary then. Often these were in the form of a uniform minimum setback requirement applying to all lots on all streets of a subdivision. The trend has been, and still is, toward a more diversified use of building-line setbacks, varying in depth within a subdivision according to local conditions, topographic and otherwise. Not infrequently these are fixed without topographic motive, in a deliberate attempt to bring about variety in the compositions of buildings. To facilitate mechanics, it has become convenient, and usual, to show these varying setback lines on the record plat of streets and lots, with brief references to that plat in deeds and/or declarations.

Somewhat slower to come into general use in restrictions were minimum setbacks from the lot lines, and from side lot lines (except where building to the full width of the lots is intentionally permissible), and limitations on heights of buildings and percentages of lot occupancy. Evolution of these has been along similar lines of increasing flexibility so as to accomplish the essential purpose of insuring adequate light and air and the amenity of well-distributed open spaces, without producing an appearance of rigid regimentation and without needlessly and arbitrarily hampering individual preferences. Thus various specified open spaces on lots are often required to have minimum *aggregate* dimensions which are stated functions of the size and shape of the lot or of the building, while much latitude is permitted to the individual in apportioning these open spaces to various parts of the lot.

It is obvious that the foregoing types of restrictions, taken as a whole, can cover, and they not infrequently *do* cover, practically the same field as modern public zoning regulations under the police power. They can also be made to cover substantially the same field of structural and sanitary details with which municipal building codes normally deal. In rare instances, generally in large developments in localities which have no such codes, these restrictions do so. But they can, and often do, go further than is legally possible for zoning regulations and municipal building codes in shaping planned neighborhoods toward definitely preconceived ideals, especially esthetic ideals.

Three distinct trends are now apparent. In localities where satisfactory public regulations of these types are lacking, the tendency (at least in large developments) is to make restrictions perform all the functions proper to such public regulations—"and then some." In localities where such public regulations are reasonably good, two opposing trends are apparent. One is to rely on the regulations for everything they cover, thus greatly simplifying and reducing the private restrictions by confining them mainly or wholly to matters as yet beyond the scope of regulation under the police power—such as matters of personal taste in esthetics (and matters, like characteristics of occupants, that are beyond the purview of this article). The other—more apparent in the attitude of some professional planners than in actual practice—is toward duplicating in restrictions as much as possible of at least the zoning portions of existing public regulations, and improving on them by further refinements. Such provisions are framed to guard against the hazard of political overturns which might suddenly deprive a planned neighborhood of the protection—against inappropriate uses and structures—afforded by the public regulations initially in force. It is to be noted that an independent and simpler insurance against this last hazard is possible through a strong and workable requirement for specific approval of plans (heading 2b, below).

Finally under heading 2a are some historically interesting attempts, mostly between 1880 and 1910, to control the esthetic qualities of future buildings merely by writing into restrictions verbal prescriptions (or prohibitions) of this or that "style" of architecture—as though the words meant something

definite enough to be enforceable by courts of law with esthetically good results. Some of the words so used are naive in their vagueness: "rural style" (near Baltimore, 1889), "no false fronts" (Colorado, 1890), "modern style" (in Spokane, in 1910)! No once-for-all verbal statement of desired esthetic qualities in architecture can be written that will automatically exclude esthetic monstrosities.

**(2b) Restrictions requiring prior approval of plans by an agency:** The rudiments of this revolutionary device appear at least as early as 1883 (Cushing's Island, Maine) in respect to *location* of house on lot—as a substitute for detailed regulations of type 2a stated in advance and intended to cover all possible cases; and by 1894 (Newton Boulevard Subdivision) in respect to "general layout" of improvements on any lot.

Its extension, to cover debatable questions of taste in architectural design and in effect to give the development company (or some other agency acting in behalf of all the property owners) a general power to "veto" the execution of plans which the agency felt would have a detrimental effect on the attractiveness and consequent land values of the neighborhood, occurred mainly between 1900 and 1917, on the initiative of a few courageous pioneers among the developers of high-class residential neighborhoods. Their success in making such restrictions a good "selling point" instead of a deterrent to sales led to a wide acceptance of the device in one form or another, especially in the optimistic 1920's.

The practicability of using it at all depends largely, as a matter of sales psychology, on the fact that everybody thinks of his *own* preferences as altogether reasonable and demonstrably worthy of approval, but knows that *other* people are liable at times to do unreasonable things injurious to the neighborhood and to him, if not restrained by external authority. Even so, willingness to accept control of this far-reaching, ill-defined, and potentially arbitrary sort of control requires great confidence in the reasonableness, discretion, and integrity of the approving agency. That depends in part upon the framing of the restrictions and on the express and implied criteria by which the approving agency is required to govern its decisions, disregard of which would give grounds for relief from the decisions by the courts. Even more, however, it de-

pends in the long run upon the personnel of the particular agency and the manner in which it habitually uses its authority.

After a few months of experimenting, about 1908, in one of the most notable of the early applications of the principle in a systematic and serious way (not perfunctorily as a mere talking point for salesmen), E. H. Bouton, then president of the Roland Park Company, said, "We began to find that almost every time we sold a lot we made two enemies: the purchaser and his architect. You can't stay in the real-estate business on that basis, and we had to modify the methods of administration to make the system workably effective for its purpose." As modified it was eminently successful for its double purpose of keeping the neighborhood up to relatively high standards, esthetically and otherwise, and of stimulating sales.

#### **Index of growth of restrictions requiring official approval of plans for houses:**

(1) 25 cases selected at random from neighborhoods designed by Olmsted Brothers: 1900-1910, 12%; 1911-1920, 33%; since 1920, 80%. (2) 54 others selected at random, but chiefly of the better sorts and practically all since 1915, 53%.

#### **APPROVING AGENCIES**

In by far the greatest number of cases, either the development company or other initial vendor of the lots simply reserves this power and duty to itself. The acceptability of this arrangement to purchasers depends entirely on their confidence in the continuing good faith and skill of the vendor and its successors in interest. It has two chief weaknesses, in theory and in practice. One is the danger of the influence of changing sales policies on the manner of exercising the power—especially the powerful temptation to lower the original standards, in order to facilitate additional sales, after enough high-class development has taken place to give the neighborhood *reclame*, and as the vending company approaches or reaches the position of owning a minority of lots, most of which are vacant. The other is reluctance of some prospective purchasers to put themselves so much at the mercy of the vending company's decisions without ready appeal to some more disinterested agency, either because they fear arbitrarily severe control over their own improvements, or because they realize the risk of a subsequent arbitrary lowering of standards

applied to neighboring lots. A relatively recent and simple device for mitigating these weaknesses is to provide for appeal on request from any of the company's decisions to a supposedly more disinterested and expert body. Normally this consists of a small committee which includes at least one architect and one landscape architect, with vacancies filled on nominations by designated institutions. If appeal to such a body can be taken not only by one whose plans are *disapproved* by the company but also by neighbors who question the propriety of the company's *approval* of certain plans, both weaknesses are met—at least in theory and to a considerable extent in practice.

At the opposite extreme from vesting the power of approval and disapproval of plans in the vending company alone is the method of having all plans passed on by an independent tribunal or "art jury." One of the most complete, elaborate, and, in practice, effectively functioning setups of that type is that of the Palos Verdes Estates in California, where the art jury (of which the secretary is Charles H. Cheney, AIA) is a permanent institution, independent of the vendor company and supported by endowment fund. It has, in fact, produced excellent results from every point of view; but the system involves relatively large overhead costs, and is therefore not generally applicable except in large developments. Also, investors in the highly speculative business of developing planned neighborhoods have seldom been willing to relinquish so completely the direct influence of their sales departments upon the policies and practices of the approving agency.

**Features of plans subject to approval; the governing criteria:** These are of great importance for making a practical and legally sustainable system of approving plans. As to houses, the features specified as subject to approval should be only those which, *in the given neighborhood and as observed from outside of the lot*, are likely to have an important effect on the value of other lots for purposes appropriate to that particular neighborhood.

Criteria for approvals and disapprovals of house plans based on preference for a given locality of one esthetic type or "style" of architecture over another, and not upon the *quality* of a design as representative of its own type, cannot be made definite in words, beyond the simple proviso that a building shall not be seriously inharmonious in

style with neighboring buildings. Before neighboring buildings exist, and in order to start the stylistic evolution of the neighborhood in a planned direction instead of leaving it to the whims of the first builders, the most intelligible criterion is one first used in Palos Verdes Estates in California. This consists of a statement that, to win approval, the design for a building in a given locality must be reasonably harmonious with those of certain sample buildings (shown in photographs and/or drawings) representing about the maximum range of stylistic variations considered to be harmonious and appropriate to the locality. Other photographs show buildings which, although good of their kind, are considered beyond the pale.

### DURATION OF RESTRICTIONS

Restrictions for planned neighborhoods will fail of their purpose, sometimes disastrously, either if they expire too soon, or if the period they are to cover is so long that changing conditions prove some of them clearly inappropriate and unreasonable. The best present practice makes them run for a limited period (generally more than 10 and less than 30 years), with provision for their automatic reapplication at the end of the period for another like period, except in so far as the then owners of stated percentages of the property to which they apply agree in writing to the discontinuance or amendment of some or all of them; and similarly at the end of each successive period. Also of importance, for the sake of elasticity, are provisions for the waiving or modification, at any time, of certain of the less fundamentally important restrictions in their application to any particular lot or group of lots upon written consent of neighboring owners within a specified radius.

### WHAT ARCHITECTS CAN DO

Broadly speaking, architects are in a good position to render a valuable service in educating clients and the general public as to the wide range of usefulness of restrictions as an instrumentality of neighborhood planning—a very flexible instrumentality, very far from being standardized into a machine for use in only a few particular kinds of large real-estate operations.

In the actual drafting of restrictions to meet the needs of individual operations, and in the administration of some such restrictions, architects have done in the past, and should do in the future, a lot of valuable and more or less remun-

erative work as professional consultants, usually in collaboration with other experts. Of all the sets of restrictions that I have helped to frame during 45 years, there were few, if any, on which one or more architects did not collaborate, and I have repeatedly insisted on bringing architects into consultation about them.

Of course, the more an architect (or a landscape architect, or an engineer, or a lawyer, or an expert in the marketing of real estate) understands, through study and experience, about those aspects of the complex business of developing and marketing entire neighborhoods which are tangential to his own profession, the more useful and more reliable are his contributions to the drafting of restrictions for a particular neighborhood. The collaboration of an architect, whether he has much or little of that desirable breadth of background, is of basic importance in the framing of good restrictions, and in their subsequent administration as well as in many other parts of the job of designing and creating well-planned neighborhoods.

### A word of warning

The pitfalls that beset the way to success with restrictions involve many and diverse technical considerations. If a lawyer, let us say (even one who is widely experienced in problems of community planning), assumes professional responsibility in such a job without cooperation of an architect who knows his way around in this field, his client is likely to run into endless mistakes that a competent architect would have enabled the lawyer to avoid.

But the point most to be impressed on architects interested in this sort of work is the gravity of the opposite risk: the temptation of assuming that they have a sufficient familiarity with the non-architectural techniques involved to enable them to know when they are beyond their depth—to know, of their own initiative, just when and how far and about what there is vital need for applying other skills.

These restriction problems call peculiarly for *joint* professional responsibility throughout, even if varying in degree in different cases, on the part of the right sort of architects, lawyers skilled in the law of restrictions, realtors skilled in the problems of marketing and management, and experts in the physical and esthetic manipulation of entire terrains for the purposes of planned neighborhoods, i.e. the right sort of landscape architects.

# THE BENEFITS OF CONTROLLED NEIGHBORHOOD PLANNING

By SEWARD H. MOTT,  
Director Land Planning Division,  
Federal Housing Administration

THE FEDERAL HOUSING ADMINISTRATION was set up under the terms of the National Housing Act to accomplish two main objectives:

- (1) to stimulate housing construction;
  - (2) to improve housing conditions.
- This is being accomplished through insuring private financial institutions against loss on high-percentage long-term low-interest loans which are made on residential properties that meet certain standards established by the Administration.

It is clear that before standards could be established an analysis had to be made of the factors which sustain and also those which break down residential values. The main factors affecting mortgage risk were found to be:

- (1) quality of the location;
- (2) quality of building design and construction;
- (3) ability of borrower to pay.

When a loan is found to be seriously deficient in any of these items it is not considered a sound mortgage risk.

The quality of the location is directly affected by sound neighborhood planning. The character of the neighborhood has a tremendous effect on the soundness of the loan. A good house in a poor location is hard to sell, whereas a poor house will usually find a market if well located.

Good neighborhoods do not "just grow"; they must be planned. Planning is here used in its broader sense. There

must not only be a proper street and lot pattern but there should also be a well coordinated program of land use control. The well-planned neighborhood should have the protection provided by adequate zoning and subdivision regulations, proper health and building codes, and necessary protective covenants placed as blanket encumbrances against all lots in each subdivision.

The FHA is so strongly conscious of the risk in insuring loans in unplanned neighborhoods that it has created a Land Planning Division with technicians located in key cities throughout the United States. It is their duty to analyze all undeveloped as well as many partly developed subdivisions in which insured loans are requested, and which have received the preliminary approval of the local FHA office. Plan changes are very frequently recommended and are often made a mortgage insurance requirement. Minimum protective covenants necessary for that particular tract are outlined, and land use is carefully controlled, as are the type and extent of street and utility installations.

The protective covenants which are required provide a much more detailed control than the average zoning ordinance since they cover such matters as architectural control, minimum house area, and minimum lot size permitted.

In some communities no loans are accepted due to lack of zoning or to poor administration of existing zoning ordinances as it is felt that the risk of neighborhood breakdown is too great and the security is not considered sound.

It has been repeatedly proved by the FHA that through the intelligent use of

these various planning techniques, good residential neighborhoods can be created and that in no other way can effective results be secured.

The community as a whole benefits from this sort of inclusive and ordered planning because a neighborhood is like a barrel of apples—one bad apple will ruin the whole barrelful. It also benefits because a well-planned neighborhood creates and sustains property values. The rapid change of neighborhood character is eliminated by foreseeing the community's needs. Due to the increased appeal and marketability, tax delinquencies are less frequent in planned neighborhoods, tax returns are greater, and the community benefits by having fewer unproductive properties to carry at public expense.

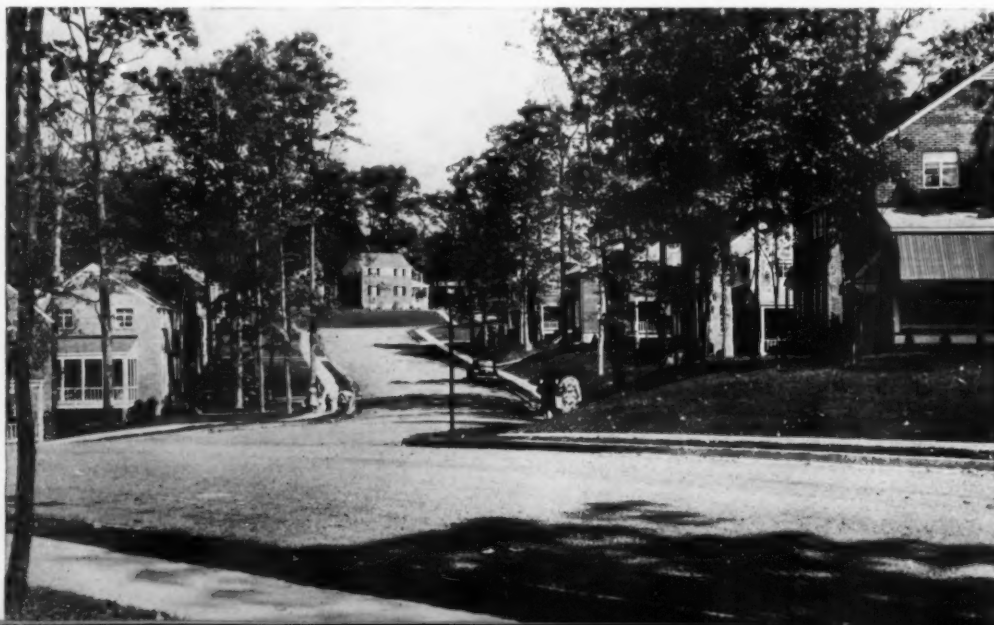
The scope of this part of the FHA program may be judged from the fact that approximately 45% of all new home construction in the United States is now being carried out under the FHA finance plan, and in many cities over 50% of insured loans are being made in planned neighborhoods.

Even when homes are financed through other sources, developers find it desirable to have their subdivisions qualified for FHA loans. During 1939 over 2600 subdivisions were processed in detail by the land-planning technicians. These comprised a total of approximately 300,000 lots. About 60% of these subdivisions were partially developed areas, indicating that a very necessary job of rehabilitation is being done. This is of course greatly to the advantage of the community.

During the early years of this planning program a great amount of educational work was necessary with real-estate developers, builders, and bankers. Subdivision and planning conferences were held in every important city in the United States. Illustrated talks were given, demonstrating the advantages of good neighborhood planning.

At these conferences the economic rather than social or esthetic advantages of planning were stressed. Every year thousands of individual conferences are held with subdivision developers; their properties are inspected; and a development program is worked out on the ground. The thorough knowledge of those conditions which are peculiar to

Arlington Forest, Va.—an FHA community that has grown uniformly since 1939



each location has done much to secure enthusiastic co-operation from the developers who are continually encouraged to employ qualified subdivision designers and staff or consulting architects. Without question home buyers, builders, and financial institutions are generally accepting the fact that neighborhood planning pays. The change in attitude within five years is truly remarkable and most encouraging.

Although most subdivision planning is being done by civil engineers, landscape architects, and city planners, numerous architects are collaborating from the inception of the projects so that the design of the houses, store groups, and other architectural features are being handled as a single job. This adds greatly to the appeal and the success of the venture.

Handled in this manner, developments

of even the lowest-cost homes call for the attention of our best architectural skill. The architect has a very definite place in any neighborhood planning program. But architects must realize that considerable educational work is yet to be done if there is to be a clear demonstration to builders and developers that good architectural planning pays—even in the most modest residential neighborhoods.

## NEEDED: WIDER APPLICATION OF ARCHITECTURAL CONTROL

By CHARLES H. CHENEY, AIA

Consultant in City Planning; Secretary, Architectural Board and Art Jury, Palos Verdes Estates, Calif.

IT IS A SAD commentary on our present civilization that in general 80 to 90% of the buildings in American cities are ugly and badly designed. Many are also so repulsive in color and so lacking in any softening and refreshing grace of planting around them, that even a considerable number of structures of good design among them cannot offset the distressing effect of the bad ones. The impression of the whole is dominated by the bad examples.

Deteriorated neighborhoods and blighted districts cause an enormous economic loss. Lack of architectural control is the greatest single cause of these conditions—greater even than obsolescence. In fact, it promotes obsolescence! Worse still, it produces an unhappy, stilted, ugly environment for the unfortunate people who must live there. And they constitute more than four-fifths of us all!

How can this situation be overcome? Architectural control is the only practical method so far discovered. Actual experiments with it have long since proved their worth. In San Francisco—for instance—St. Francis Wood, designed by Olmsted Brothers, Landscape Architects, is undoubtedly one of the most perfect home neighborhoods of America. Here was set up a comprehensive scheme of protective restrictions, requiring approval of all building plans by an architectural committee of the local Homes Association. The excellent results are clear to see. There are a number of other notable residential neighborhoods of the country where architectural control has been totally or

partially exercised, with good effect. Among the best known are the Roland Park-Homeland-Guilford section of Baltimore, Forest Hills Gardens on Long Island, the Country Club District in Kansas City, and several in the Los Angeles area—Palos Verdes Estates, Cerritos Park in Long Beach, Emerald Bay in Laguna, and the Rancho Santa Fe small-farm area near San Diego. I believe that all of these have the advantage of fully competent boards of review, a majority of whose members in each case are trained architects who can read plans and visualize the completed building from the plans. They operate by virtue of protective deed restrictions, by mutual contract between all the property owners of their area. There are court decisions sustaining such powers where the restrictions have been properly drawn. Control is complete and effective.

Heretofore planners have been too occupied with trying to bring a little order out of our muddled-up cities to give serious attention to architecture. Yet buildings are the most conspicuous, the most intimate, continuously used and observed part of every city. Architecture means, to the average person, all buildings—whether good, bad, or indifferent. Some architects are still trying to argue that only structures of good design should be called architecture; and some of them still battle about the term "architectural control," used by planners to designate the growing movement for the establishment of architectural boards of review. On the whole, the help of the architects can be counted upon and they should be drawn in for service.

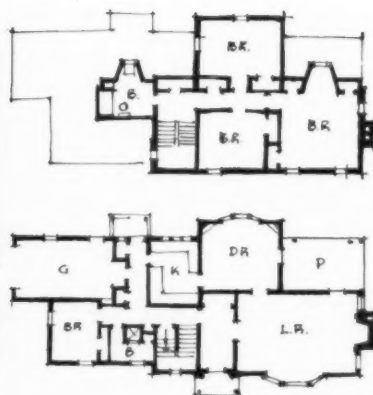
Once the financiers of America really understand the serious depreciation caused to owner or lender, not only by a badly designed building, but also by

an unattractive, off-color neighborhood, the evil is bound to be stopped as far as possible at its source.

The most important forward step for architectural control in this country has been taken by the Federal Housing Administration. FHA standards are already having a marked effect even on lenders who do not take out FHA insurance, as well as on developments in cities where FHA operates on a large scale. This process is slow. Cities desirous of stopping any considerable proportion of bad architecture in new structures will have to set up architectural boards of review, under the police power, to pass on all plans for which building permits are sought.

Reasonableness is about the only limit on the use of the police power by public bodies, the courts have held. It is only reasonable that this great economic and social evil and its public regulation through architectural control should soon be recognized and fully sustained by the highest courts.

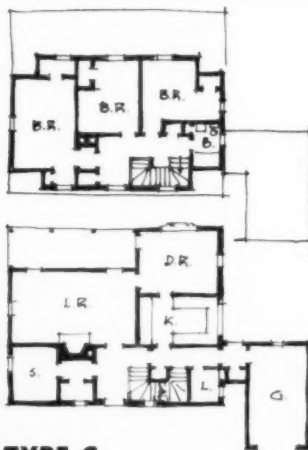
Planning commissions are not qualified nor properly constituted to act as architectural boards of review. They seldom have more than one member who can read the plans presented to them. If they accept the responsibility now being placed upon them by some zoning ordinances, they have to depend upon some draftsman to look over plans, to consult with designers or owners about them, and to advise the board for action. This is a left-handed and weak method and can hardly have the respect and confidence of the architects and designers who make the plans. The alternative is for the commissions to set up a competent architectural board of review, first in an advisory capacity if necessary, but with an official and established status given it as soon as possible.



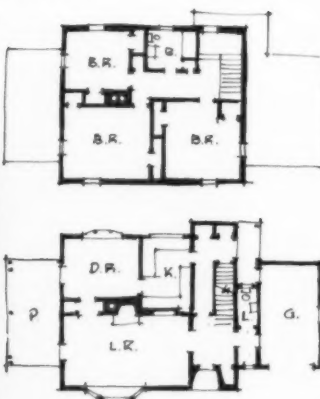
**TYPE A**



**TYPE B**



**TYPE C**



**TYPE D**



These four basic designs were used for all twenty of the houses now built at Bonneville. Monotony was avoided by using plans in reverse and different entrances, surfacing materials, combinations of color, etc.

# S REPORTS FROM ARCHITECTS ACTIVE IN THE FIELD



POWER HOUSE

TOWN OF BONNEVILLE

DAM

COLUMBIA RIVER

## REPORT NUMBER 1

By **HOLLIS JOHNSTON, AIA**

Architect for the entire government town of Bonneville and other Oregon communities

IN 1933 I was fortunate enough to enter government service with the United States Engineers as both consultant on the engineering structures of the Bonneville Project and as designer of the group of houses built as the permanent quarters of the operating staff. By 1935 the job was finished. In 1937 a similar but larger project came to the office—the design of the industrial town of Gilchrist in central Oregon.

The government job came during the darkest days of the depression through the recommendation of certain men on the engineering staff. The 1937 job did not come—as you might expect—as a result of the experience gained from the first, but through former clients. It is purely a coincidence that these two un-

usual similar projects came to the same man within so short a period of time.

This class of work is extremely interesting in that it brings the architect into important neglected fields of design, making use of his talents of visualization as to building sites. It also calls on his knowledge and experience concerning the size, shape, desirable grades, drainage, access, and servicing of the individual properties which make up the community.

It is quite possible that the public is coming to recognize more fully the value of the architect's talents in this field. Lately I was called into a discussion with a promotion company which was about to reopen a property which had been platted some 30 years ago. There was some consideration given to replatting according to present-day standards. There were certain obstacles and the idea was dropped. The significant

thing was their intention of putting the replatting into the hands of an architect. Along the same line, I have a contract for and have done the preliminary work on the design of the new deep-sea ship port city of Dallesport, Wash., 40 miles up-river from Bonneville. I am confident other similar projects will follow.

For the Bonneville job, the Architect's Office was organized as a department division in the U. S. Engineers Bonneville District Office, which had charge of the design and construction of the entire Bonneville Project. In both the design and consultation work, co-operation between the architect and other division heads was close and satisfactory. The architectural division was subject to the head civilian engineer and the army officers, and had equal standing within the whole organization with the other departments such as dam, locks, powerhouse, and fishways divisions,

each of which had a separate design organization.

The duties of the architectural division were designing, taking bids, letting contracts, purchasing certain equipment, consultation with the resident engineer on supervision of construction, and, as stated above, consulting with the engineers on the architectural treatment of the large engineering structures.

The town of Bonneville was designed to accommodate 20 houses to be built immediately and to provide for future expansion. Circumstances which affected the design were the activities of the engineers and contractors doing work on the engineering structures. The ground in and around the town site was being used for assembling and fabrication of materials and storage of excavated earth which was later to be used for fill. These conditions set the design of the streets and the layout of the sewer, water, street lighting, and telephone services.

All utilities are underground, freeing the town from all overhead poles and wires. The water-storage tank is a disfigurement at present, but this is temporary as it is soon to be moved to another location.

Landscaping of the entire Bonneville site was among the responsibilities of the architect. Much of it is now finished. Landscaping of that part of the town which the visitor sees first has been complete for several years, and its

beauty is outstanding. This work was designed by Walter Gerke who was a member of the architectural division.

The items handled by the architectural division included the design of the houses; the school; the administration building; the auditorium; the railway station; the sewer system; the domestic water system; fire-protection water and irrigation water systems; the underground wiring systems; the street paving; the landscaping and grading. In addition, the architect was consultant for the locks, powerhouse, fishways, railroad viaduct, and to a lesser degree, for the dam itself.

The industrial town of Gilchrist (see sketch below) was designed and built for a new company which had installed a small sawmill. The architect was given the site and called upon to design the town to fit the restrictions of the natural terrain and the business of the industry.

On account of the limited need for growth, the town plan was made definite, with the commercial, utility, school, and residence sections well defined. Here again, the architect designed the streets, sewer and water systems, as well as the buildings. And as at Bonneville, the results are in harmony and, in general, are quite successful.

In the case of Gilchrist, the aim was to provide graceful and comfortable living for the employees. It was a conviction with the owners that the expenditures were justified in that they

felt that the best type of men would be attracted to their industry, and once settled, these men would be likely to remain.

While the Gilchrist buildings are undoubtedly more costly than traditional frontier types, the carefully laid out town plan is a measure of economy. Provision for the future growth of the town has been made with all facilities already in place, thus obviating the prospect of future disjointing changes.

This type of work offers opportunities for the architect's office. Town planning is a corollary to architectural training, and it is my conviction that the architect's point of view is an essential contribution. The design of utilities requires special preparation, but acquiring command of its principles is not insurmountable. The qualified architect may well engage in this field along with his ordinary practice with his usual organization, with the possible addition of a civil engineer or landscape architect. I am aware that in the past this type of work has been largely in the hands of engineers and surveyors. But the number falling to the architectural profession seems to be increasing, and as superior results are obtained, I feel sure these opportunities will increase and become an important department of practice. The profession may well take steps to inform the public more vigorously that it is prepared to handle this type of project.





## REPORT NUMBER 2

By **EDWARD D. PIERRE, AIA**

**Of Pierre & Wright, Architects for almost a score of planned developments in Indiana**

WHILE OUR OFFICE has done several developments in the higher price bracket, the comments in this discussion are centered around our work in designing the smaller home for subdivisions developed by operative builders. So important has this work now become that the separate department of the office set up to handle it is ultimately to be completely severed from other of the firm's activities.

Our small-house practice began with an ideal and an earnest desire to help solve the architect's small-house problem. The ideal consisted of a sincere conviction that the profession owed an obligation not only to the great mass of citizens who can afford to build only small homes, but also to the youth of the profession. In focusing on the small home as the possible method of discharging both obligations, we also felt that, under the proper circumstances, the work would be both practical and profitable. In preparation for the hoped-for projects, much time was spent during the depression years on intensive research and study of the small-house problem.

After wasting some time in a romantic search for the "ideal" community in which to make our contribution, we came to the undiluted realization that if we were to participate in small-home development at all, we must accept the opportunities offered as they are and not as we might have them be. Many consultations with builders resulted in as many discouragements, until we finally got together with a young builder,

Robert L. Mason, President of Good Homes, Inc., who saw eye to eye with us and gave us our first project.

The commission was to plan 14 homes as the first unit of a larger development. Sketches were prepared and working drawings made. Typical details were repeated throughout, saving much time and effort. Everyone entered into this project as a pioneer venture. Finally 26 houses were built, from 8 basic floor plans, in the selling range of from \$5200 to \$6500. Limited architectural supervision was part of the service rendered.

These proved sufficiently successful for the same owner to commission us to plan 22 other houses for another development. Nine of these are now built and sell for from \$6500 to \$8500. Our next commission, for Wabash Homes, Inc., of Wabash, Ind., was to develop a project of 100 homes in the \$4300 to \$4700 bracket. Each of the houses consists of living room, two bedrooms, bath, and combination kitchen-dining room. Dry construction was used throughout. Twenty-eight are now built.

In rapid succession, contracts were signed in Hammond, Gary, Crown Point, LaPorte, and Vincennes, Ind., with approximately 100 houses now completed. In the city of Indianapolis the firm is supplying architectural services on six subdivisions for local companies. In all except two of these, our firm will design all the buildings erected.

In contemplating the possibility of entering this type of practice, an architect must be equipped with a thoroughgoing knowledge of this highly specialized problem. He must be in it with both feet and respect it as a noble endeavor and not one that will be hastily

abandoned at the first sight of a so-called "big" job. Any architect in this line of work can feel confident of his position as a real and practical factor in small-home developments. My personal opinion is that in a few years the entire fraternity of operative builders will be looking to our profession for assistance. Meantime, and thereafter, it is our job in every way possible to work toward raising the public standard of appreciation.

The curious situation at present is that, in large part, America is paying for architectural service and is not getting it. All Federal-insured mortgages are secured by the private wealth of all citizens. If this be true, then it is high time the general public gave some thought to the standard of the mortgages they are asked to secure. And it is a responsibility of the men of our profession to be the first to show an active interest in this major problem.

Where a sufficient number of talented young architects are interested in small-house work, they should band together and provide a clearing house and work to make their communities and the nation conscious of good home architecture. When there is a national awakening of architects, there will be a national awakening of clients.

The small home is a responsibility not only of the profession but of the entire building industry. When the architect has properly prepared himself for action, and when basic standards are adopted, the craftsman, the builder, and the material supplier should be invited to participate. In fact, they should not wait for this invitation but volunteer their help not only in the interest of the public welfare but as a cold-blooded business protection of their own future.



## REPORT NUMBER 3

By MARCEL VILLANUEVA, AIA

Staff Architect for General Properties Inc.'s two extensive New Jersey tracts

AN ARCHITECT'S PLACE in community life is an enviable one, because it offers many fields where his training and judgment can be of value to the general public. When the profession's plaintive expressions for more recognition, more leadership, and more business are heard, however, one cannot fail to ask the questions:

What are we doing about it?

What contribution are we making to the community?

Are we really an asset?

Frankly, the answer is that we are making very little effort that can be construed as disinterested, constructive, and designed for the common good in civic affairs. We wait for a job to come in and then, it is true, we do our best to do it justice. But in doing so we are apart from the trend of our time toward the handling of "areas" rather than individual "buildings."

Although we are living in a new country, we have grown prematurely old. Obsolescence surrounds us right and left. It appears not only in our large areas of slums but in sections of our



towns that were good only 10 or 20 years ago. Already many of these have started on a decline that makes real-estate investment in them insecure. What about the house which our client bought 12 years ago for \$15,000 and is worth only \$10,000 today? What about the stores, apartments, and office buildings which were to be investments of an income-producing nature, which barely bring enough rent to pay for the taxes and interest on the mortgage? In many cases such conditions are not the fault of the buildings but of the general character of their environment.

Instability of real-estate values will probably stand out as one of the tragedies of our generation, because not only do we have property owners who see their hard-earned savings dissipated, financial agencies with their margins of safety wiped out, but municipalities, also, witnessing the constant shrinking of ratables, with higher taxes for nothing in return.

As we drive from state to state, and from small town to large town, we cannot help sensing the ugly, haphazard, disorganized manner in which most of our communities have grown. A few blocks here and there are good—and then nothing. As I see it, the architect

must play a much larger part than heretofore. Architecture is but an element in the broad planning program to which we must give our time and effort.

Today it is generally accepted that the "neighborhood" more than the house is a man's home. A mediocre house in a good neighborhood has more value than a very good house in a bad neighborhood. Better neighborhoods, both commercial and residential, should be our aim if we are to learn anything from the past. Perhaps the most encouraging effort now being directed by town-planning boards is toward reclamation of substandard areas and toward intelligent guidance in the creation of new centers (see sketches, opposite).

What are the architects doing in this crusade to bring order out of chaos? I will give you an idea when I say that in the State of New Jersey there are about 2,000 architects registered, of whom about 1,500 practice or reside in the state. Yet out of 74 planning boards, with a total membership of 518 men, there are only 4 architect members.

Who is doing the planning in New Jersey? A good cross section of laymen, from the plumber and lawyer to the real-estate man, who are interested in the civic life of the community. They

are the ones who are discussing subdivision layouts, reclamation of obsolete neighborhoods, the new zoning laws, and what not, while our profession is conspicuous by its absence.

In my opinion, we are living in a period when the architect should take leadership in organizations that plan sound, new neighborhoods from scratch to finish—from the winding road around an age-old tree to the ultimate in kitchen layout, equipment, and decoration. If his ability measures up to the task, there is no reason why the architect cannot become the most indispensable element in this kind of organization.

Speculators or "jerry" builders who pay a pittance for stock plans do not enter the picture in this case. It is a matter of applying the sound and proven principles of big business to one of the largest and yet most disorganized national industries. The objective is to produce the best house that money can buy, an honest product, reasonably priced. Development of land with a harmonious play of buildings against buildings produces "neighborhood." And neighborhood is what people want to buy.

Planning in this broader sense is the present-day challenge—and opportunity—that is offered to the profession.



Three of the houses designed by Marcel Villanueva in General Properties, Inc., developments in New Jersey. All of the houses in these developments are designed and built for specific owners. Sketches on page opposite show projects proposed by Mr. Villanueva for the improvement of facilities for parking and shopping districts in New Jersey communities.

Photos by George Biggs, and Apeda



## REPORT NUMBER 4

By **JOS. TH. JOESLER, AIA**

**Architectural Supervisor for Catalina Foothills Estates, Tucson, Ariz.**

THIRTEEN YEARS AGO I started to work as architectural supervisor for a company that had just purchased some acreage on the outskirts of Tucson which it was subdividing as a high-class, well-restricted residential area. None of the lots were sold unless the purchaser agreed to have the company handle the designing and building. The success of this development led to the purchase for development of more than 5000 acres in the foothills of the Santa Catalina Mountains, four miles north of the city.

While I have continued to work with the Murphey-Keith Building Company on a retainer-fee basis which gives me an assured security, I also maintain independent practice.

Working with a development company has several very definite advantages.

In my case for instance, I have had the experience of designing—and supervising construction of—over 300 homes, apartments, and commercial buildings. Opportunity to play a major part in the development of a community (see photos above) is by no means the least of the advantages offered.

Although the retainer fee as supervising architect for a development may be small, this is balanced by the fact that very little of the architect's time is necessary to check through and approve residential plans. The steadiness of this income is another point in favor of this type of association. There is the further advantage that the fact that he is the architect for the development and must approve all plans puts his name before each purchaser of a home site and secures the recommendation of the development company to each purchaser that he be retained.

An interesting and—so far as I know

—a unique plan was used in laying out the first acreage in Catalina Foothills Estates. The company president and I went over the terrain and placed a flag on each site suitable for a home; the surveyor was then instructed to make the survey around the flags and lay out the necessary roads to the sites.

Due to my position as architectural advisor for the development company, the vast majority of my work has been residential. However, I was commissioned to do all of the commercial work in the development, such as the community center, the shopping center, many other store buildings, and a number of warehouses. There is no limit to the co-operation an architect can receive from a good development company. In my case the benefits that I have derived from such an association have been so rewarding that I would not give it up under any circumstances, other than dismissal by the company.

## REPORT NUMBER 5

By **DONALD McCORMICK, AIA**

**Consultant on developments in Kansas and Oklahoma**

WHILE THE IDEA of architectural control of a subdivision is not new, it never has gained widespread acceptance in this country. Although it seems to have been generally successful where tried, I should hazard a guess that it is relatively rare because of the ordinary business man's (realtor's) indifference to architecture, good or bad, the home

builder's resentment of regulation, and the architect's apathy toward developing new potentials for business.

There are several potent factors in securing this work. These, I believe, are a sound professional reputation in the field of home design; tolerance and catholicity of taste; a conviction that sound planning and control stabilize values and, in the long run, prove profitable to both landowner and architect.

Equipped with these qualifications and a willingness to suffer the discour-

agements of all pioneers, the architect should be able to sell his services in this field. A word of caution: Even more than in ordinary practice will his mistakes come home to roost, for under this type of set-up, the architect is actively identified with the project for years to follow. Therefore, he must not only insist upon what he knows to be right in the planning and the restrictions, but must leave them sufficiently flexible to meet changing conditions. This can be accomplished by allowing the architect

wide discretionary powers.

In Forest Hills, a 160-acre subdivision near Wichita, Kan., emphasis was laid on quality of design and construction. As consulting architect I was given full authority not only in construction but in the matter of design, location on lot, fences, exterior color schemes, etc. We made lot frontages at least 90 ft. Blocks were laid out as long as possible to reduce road and utility costs. Streets are so planned that through traffic is discouraged. We made certain restrictions on price, size, and type (one or two story) of house, etc.

In my two years' experience with this particular subdivision certain advantages in this type of work have become clear. Most important is that this planned neighborhood has been given

FHA's highest possible rating, despite the fact that Forest Hills is two miles beyond Wichita's corporate limits. In addition two large insurance companies have approved the property for loans at their lowest interest rates without FHA insurance; and 34 other mortgage lending agencies have approved it for loans. The appearance of the subdivision is better where control is exercised; and land values are stabilized.

There are however some disadvantages to be found in subdivision work. For instance, development is slow. Perhaps, as in the case of Forest Hills, this is due to its distance from the city; perhaps, to the restrictions. Undoubtedly the usual speculative builder is not attracted to this type of development. Another peculiar phase is the tendency

toward overbuilding on lower-priced lots. Because land values were reasonable, purchasers built homes far above the minimum cost requirements. This necessitated an increase in restrictions to protect previous construction and to maintain the appearance of the section. In one case, offers on a low-cost vacant lot, on which the bidders wanted to build a modest one-story house, were refused; the character originally planned for this neighborhood had changed, with the construction of two-story houses in the \$12,000 to \$15,000 bracket on lots at either side.

It is interesting to note that Norris Hills, a new development near Ada, Okla., has been laid out, and its restrictions written, on the basis of the experience gained at Forest Hills.

## REPORT NUMBER 6

By **JOHN A. AHLERS, AIA**

Architect of houses in the Roland Park - Guilford - Homeland districts of Baltimore

PERHAPS MORE IMPORTANT than local pride in the soundly planned community is the influence exerted by such a development on surrounding land. In Baltimore we have several good developments which are nationally known: Roland Park, Homeland, and Guilford. The success of these restricted residential districts has caused outside builders, who up to recently had indicated very little appreciation of the planned development, to follow their example and not only to offer to the public well laid out, attractive districts but to set up standards for the houses in them.

Proper restrictions are as advantageous from the architect's viewpoint as from that of the home owner. The restrictions or controls which influence the development of plan and design in a given locality are principally cubage, mass of building envelope in relation to adjoining properties, roof lines, orientation, setback, free space, and service outlook. Applied to all houses these restrictions assure that a given property will be developed in harmony with the immediate neighborhood, or will establish at least a minimum standard in that section. The developed property will not be adversely affected by future adjoining improvements. And, incidental-

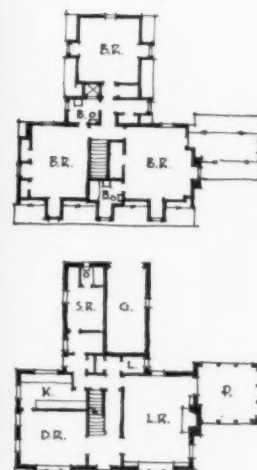
ly, mutual compliance with these restrictions, by all home owners in the development, will prove a safeguard to the investment of each. On small properties the allowable building width is usually needed in its entirety for the house plan; if consistently repeated on adjoining properties, however, this results in an appearance of insufficient free space. I believe it is being more and more generally recognized that wider lots with a proportional increase in free side areas provide a much better setting for the

individual house, and assure a much finer development as a whole. Another helpful effect is obtained by the use of staggered setbacks, beyond an established minimum, in that this method tends to create a more open feeling throughout the development.

I believe that architects should certainly try to influence adoption of sound planning standards before the development has been substantially begun, by graphically demonstrating the benefits which result.



Residence in Murray Hill, Baltimore County, Md. John A. Ahlers, Architect



## REPORT NUMBER 7

By **BURTON ASHFORD BUGBEE**

Architect for several hundred houses in large-scale developments around New York

ON THE OUTSKIRTS of every large city throughout the country, are developments with individual volumes ranging from 5 to 200 houses a year which clearly demonstrate the need of architectural guidance. The more enlightened developers require no arguments to convince them of the value of the architect, either as a permanent staff member, or as an outside consultant. What is needed is better understanding and co-operation instead of the antagonism that usually prevails between builder and architect.

The architect who designs development houses is in a realistic world where results—sales—are what count. He must have a keen perception of the quirks of public taste. Here, far more than in usual private practice, every dollar spent must produce returns. Often, under the present setup, some sound yet hidden values must be sacrificed for external features. Yet the general principles of good design hold. The basic rules of plot layout, orientation, room relations, and furniture space, though usually unknown to the public, are important. Morning sunshine in the kitchen and southwest exposure for the living rooms are important selling aids.

The salable house is an intangible mixture of sound design and eye-catching features. The center-hall type of plan remains a favorite, both in the story-and-a-half (or Cape Cod) house, and in the large two-story versions. It may be expanded to include maid's room or study on first floor, and as many as four bedrooms on the second floor. The end hall is another plan upon which endless changes may be rung.

The public is beginning to accept now the plan with the kitchen on the street side, which offers the advantage of play, living, and dining rooms in the rear, opening onto the private garden.

At present it may be said that variations of the so-called Colonial style are by all odds the most popular—probably constituting 75% of all houses built. It pleases the builder as well as the pub-

lic, for simple mass and roof lines lower building costs.

It is difficult to reduce the buying public's taste to a formula. Their desires are often vague and contradictory, based on instinct and emotion rather than logic. However, some of the basic sales points can be listed:

(1) The kitchen is probably the most important room for sales appeal. A bright and efficient-looking room, with ample cabinet and window areas, will outweigh most other features of the house. It does not necessarily have to be a large room, but it must have colorful, sanitary floor and wall materials, good light, and streamlined equipment.

(2) The bathroom also counts heavily. Even in a small, inexpensive house, the buyer expects tiled walls and floor, stall shower, and in general an impressive, even oversize room. Colored fixtures, plate-glass shower doors, and lavish mirrors are important.

(3) In even the smallest houses a separate dining room is still required. In addition, either breakfast space in the kitchen or, preferably, a more or less separated breakfast nook or room is usually demanded. The combined living-dining room, so widely found in competitions and in many small houses outside the operative field, still has not met with general public acceptance, although indications are that it may.

(4) Adequate closets have great appeal. Even the smallest house should have coat and broom closets, a linen closet in bedroom hall, two closets for the master bedroom, and one for each other bedroom. Oversize closets fitted with racks and hangers and compartments are desirable.

(5) Rooms must be organized to accommodate standard furniture units. A living room with no proper space for a couch meets resistance.

(6) The attached garage, preferably on the kitchen side, with direct access to the kitchen, has won almost complete acceptance. Garage doors facing the street are accepted, but are preferred set back behind the front line of the house. In more expensive work, garage doors opening at the side seem desirable.

(7) Three bedrooms are still the usu-

al requirement. Very rarely—at least in my work—is there demand for a two-bedroom house. The buyer is usually motivated by a need for space for a young and growing family.

(8) A lavatory on the first floor is very desirable, opening from a back hall rather than near the front door.

(9) A living-room fireplace is almost universally demanded—in all but the very cheapest houses.

(10) Automatic heat is another basic requirement. Winter air conditioning is coming into wider demand.

(11) With automatic heat, insulation and weatherstripping and storm windows are important. Frequently installation cost is more than compensated by the smaller heating system needed.

(12) The use of advertised materials and equipment is a good sales point.

(13) Also important are such items as door chimes and bathroom scales.

(14) Good interior decorating, with careful choice of both paint colors and wallpaper, is valuable. An empty house requires stronger color and more pattern than a furnished one.

The architect who designs development houses is constantly aware of the time lag between the best practice and public acceptance of it. It is a discouragingly slow process. The so-called modern house with open plan is completely rejected. The first-floor utility room, built-in furniture, the non-stylistic exterior, have yet to meet with the approval of the buying public.

The architect in this field frequently finds himself in a false position: The desires and tastes of the buying public—even the supposed desires and tastes as evidenced by competitive work—are the final design criteria, rather than the architect's own judgment. The architect must learn how much weight to give the mistaken desires of the public, and how much real missionary work to do.

It is seldom that the architect has sufficient control over all design elements. Street and plot layout, gardening, landscaping, interior decoration—all these logically should be done under the supervision of the architect, yet very seldom are.

The usual lack of contact with the buyer prevents study of the individual family requirements. The houses, therefore, must be designed to appeal to the greatest number of people, instead of being related to a specific family problem. The result is an impersonal quality, a striving for the "happy medium."

### WHAT OF THE FUTURE?

It is interesting to speculate on the possible future of the operative building field. At its worst it could be a strong force for evil, as many blighted areas around many cities testify. Certain sections around New York City, for instance, are rapidly approaching the status of slums because of unfortunate architectural design and unimaginative land utilization. Even more expensive developments now being built are due for rapid obsolescence because the houses are fundamentally bad in plan and appearance.

At best, the operative building system is a potential solution of the problem of providing decent shelter within the reach of a wide—even an untouched—market. The economies of large-scale operation have never been fully applied to the small-house field. The main weakness of the development builders has been identical with that of the building industry as a whole—small-scale, hand-to-mouth operations, constantly shackled by the necessity for immediate profit. Residential building is still a strongly seasonal business, with mechanics alternately hired and fired. Generally no scientific studies are made of city growth or consumer requirements.

Enlightened builders, with ample capital to permit long-range and large-scale planning, could do much to solve our housing problem, working in close cooperation with municipal planning authorities, in accordance with surveys to define the potential market, the transportation problems, and the most advantageous areas for development. Sizes and types of houses could then be planned to fit requirements of the land chosen and of the potential buyers.

### Standardization

By establishing a production schedule in accordance with a long-term plan, materials may be contracted for in quantity for delivery at stated times, at enormous savings. Standardization of elements, properly organized, would not restrict design, and would vastly simplify warehousing and delivery problems. Standard ceiling heights, kitchen units, stairs, window and door elements, porch-

es, bay windows, may be stocked for delivery as needed.

### Prefabrication

Another possible source of economies is the use of shop labor to a far greater extent, to replace slow and costly hand work in the field. We have seen the increase of fabricated stock millwork units, on a factory production basis. Double-hung windows are shipped glazed and weatherstripped, with sash, storm sash, and screens fitted. The same principles can be extended to many other elements such as stairs, exterior and interior trim, bay windows, etc. Doors can be fitted and hung in their frames and delivered as units. Framing timber can be cut to lengths in accordance with diagrams. Even plumbing units may be shop fabricated. The final step would be fabrication of a complete bathroom unit delivered ready for connection.

This would logically lead to the more or less complete use of prefabricated structural units—wall, roof, floor sections—where large-scale use would soon amortize the cost of the expensive tools, jigs, and other shop equipment needed.

### Annual wages for labor

An important effect would be the stabilizing of the labor market. With long-range operations, the seasonal peaks and valleys would be evened off, and workmen would have the security of steady employment. This would offer a good chance really to use the annual wage system. Trained field construction crews, thoroughly familiar with standard estab-

lished structural systems, could approximate assembly-line production.

### The architect's place

The architect would necessarily be the originating and integrating force in this setup, not alone in matters of house design, but in long-range planning of the basic concepts. With ample capital behind him he could set up research projects to establish improved construction methods and design standards. Progress, necessarily, would have to be gradual—conditioned by public preferences and acceptance of new ideas.

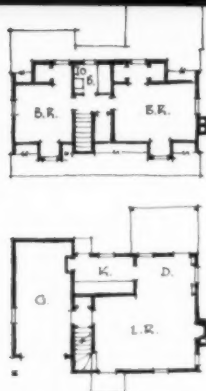
An interesting aspect would be the education of the public to recognition of the principles and the value of rational design, by means of advertising and publicity, which, although expensive, would ultimately increase sales enormously. A technically competent sales organization would be an important factor.

Thus the principles of enlightened self interest could be expected to produce large-scale benefits to all. We in America have no organizations comparable to the English companies which rehoused such a large proportion of their population in a few years' time. A rational approach to the problem with reasonable, stable returns, without government control or subsidy, could ultimately go far to reduce the gap between existing and ideal housing. We have the market, we have the mortgage money available, we have the trained technicians. We need now the originating and integrating impulse that only the architects can supply.

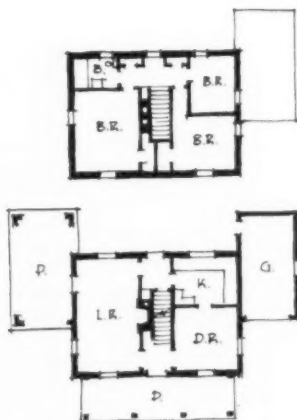


Radburn, N. J.: An example of sound planning by the late Henry Wright

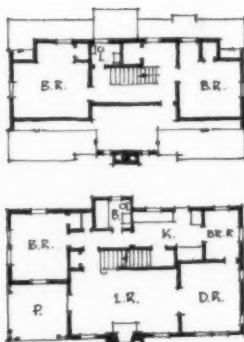
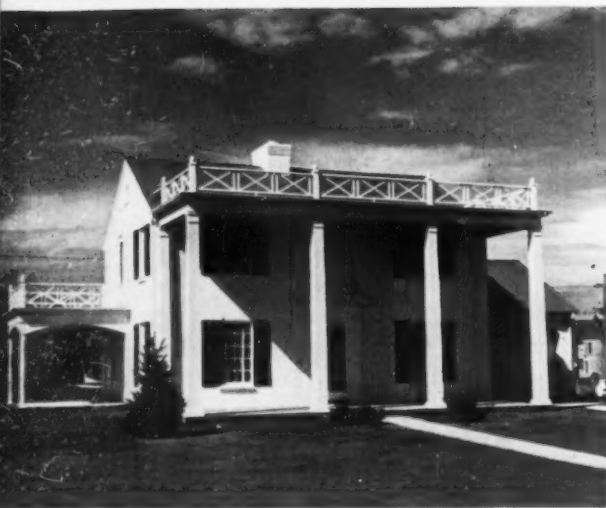
Richard Averill Smith



"Minimum" for a good subdivision. By J.C. Nichols Co. Note the living-dining room



Two houses built from the same basic floor plan for Garrett-Bromfield & Co., Denver. Plans by Willard Walker, AIA. The one at top proved its merit for a standard house built for sale. The buyer took one look at it and said: "That's just what I want."



This floor plan would classify as "different," the point at which builder begins to worry about resale value. J. C. Nichols Co., Kansas City



# REALTY EYES

By EMERSON GOBLE

Editor National Real Estate Journal

WHAT DOES the real-estate builder want from the architect? Where does he need him? What restrictions does he put on the architect? What can he teach him? Just where are the realtor and the architect apart? That the realtor and the architect are now widely separated in a field where co-operation would benefit each, is hardly news. Perhaps this statement of the realtor's viewpoint—with the understanding that the real-estate or operative builder (who needs good architectural service) is picking no fight but really wants mutual regard—will help to close this gap.

A plain statement of the situation comes from one who has long wrestled with problems of achieving good design within the practical budgets of home buyers. J. McC. Mowbray, president of the Roland Park Company, Baltimore, and chairman of the Land Developers' and Home Builders' Division of the National Association of Real Estate Boards, puts it this way:

"I believe that many of us have missed an opportunity in not giving consideration to the employment of an architect who can create charm and attractiveness in the community by his design, rather than trying to purchase his services at the lowest possible price. It is a recognized fact that the best architects have not been able to work successfully with the builder who is building houses for sale. The stipulations of the architectural profession, particularly as to the fee to be charged, are beyond the competitive builder's ability to meet. The builder, however, must recognize that a successful architect is entitled to earn his fee.

"He can only profitably employ the services of a good architect by spreading the cost of the design over a number of jobs. If, however, there is a sufficient quantity of such work, the architect should be willing to recognize the fact that the builder who purchases his services is in a different position from the individual who employs him.

"The architect must recognize that the operative house-building market is a field new to him, and that if he is to secure the business himself, he must

# THE ARCHITECT AND FINDS IT NEEDS HIM IF—

justify his employment by a careful study of this new market and be prepared to give sound advice. He should know the type of design and floor plan which have the widest appeal in each particular price bracket. He must be prepared to advise the builder about methods of construction and new materials that can safely be used to reduce the cost of a house. He should be willing to spend considerable time around a house that is open to the public and, by personal contact with the potential buyers, learn much that he never could acquire at an office desk.

"The builder must recognize that quality of design has sales appeal and be willing to pay a fair price for it. Too frequently, the builder has thought only in terms of the maximum house for the minimum cost. The buying public, the architect, and the builder would all be immeasurably better off if the builder and the architect worked together, each with a full understanding of the other's problem.

"The land developer, the home builder, and the architect all have a social obligation to create the best plan, design, and community of which they are capable. This should be done, not only that they themselves may be successful, but that, in a larger measure, their community may in the future be pointed to as an example of beauty and charm rather than a source of residential decay, which is followed by a loss to those individuals and organizations who, by investing their money, made the development possible."

To the architect who wants to get into the field of real-estate building, that statement is commended as good, frank advice. The realtor appreciates his need for capable design; he has found it difficult to get it within his budget (which is actually set by that of his customers); he is inclined to feel that more realism on the cost problem is a basic need.

It isn't that he objects to the architect's earning a living. It is rather that, as builders often say: "Everybody wants a \$12,000 house; and is willing to pay \$8,000 for it." As a matter of fact, only 5% of American families can afford to pay \$8,000 for a home. Only 14% can afford \$5,000. Buyers want good design, and builders recognize that good design increases the value of the house all

through its life. What is important is just how much of it they can pay for.

One builder, F. W. Herres, Garrett-Bromfield and Co., Denver, puts location first among the factors that sell houses. Then he says, "Of equal importance are design, balance, and exterior color scheme. In recent years we find in actual selling that many prospective purchasers will refuse even to go through and inspect the interior of a house if the exterior does not please them. The buyers of houses from \$6,500 to \$7,500 feel that they should have distinctive homes of good design just as much as those who pay \$25,000. They are not satisfied with the stereotyped homes that we were building a few years ago, and I believe this is due almost entirely to the education by national magazines devoted to architecture and home building. . . . The majority of people buy with their emotions."

Another builder, in the East, gives the opposing view: "The most important elements in the sale of a house in the price range you mention (\$6,500 to \$7,500) are the interior accommodations and the price. It is my experience that people judge the value more by the size of rooms, the number of bedrooms, and the interior features than by the design, location, etc. While I believe there is a trend toward better design in the smaller house, I do not believe it is the dominant factor in the sale. The average purchaser would rather have a badly designed, over-sized dormer poking through the roof than lose the advantage of being able to have, some time in the future, two bedrooms on the third floor."

Another realtor, R. C. Erskine, Seattle, points out that a well-designed house is worth more than its cost the day it is built, and that the extra value continues throughout its life. He uses the chart below to illustrate his point. As to architecture in relation to continued value, he says: "A well-nailed-together frame house on a good foundation, with a good

roof, kept well painted and properly ventilated, has a physical life of hundreds of years. When a majority of houses in a neighborhood have reached the end of their useful lives, from whatever cause, the neighborhood dies with the houses, and continues as a slum area. So it seems all-important that house design and construction be actually good, and that the current fashion be given little place. With a little salesmanship an architect should be able to induce his client to take a house of stable design which will be acceptable in appearance throughout its physical life. If houses of enduring quality exclusively are erected in a neighborhood, the life of the neighborhood will be long."

That last is a very good reason why the developer and subdivider require good design and sound planning—they may have lots to sell for many years in the future.

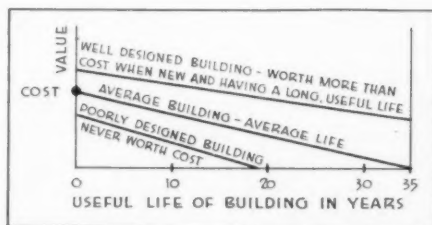
Willard Walker, AIA, architect for the National Real Estate Journal Plan Service, puts it briefly: "A person who buys a house is certainly entitled to good architecture, and by that I mean one which has the intangible quality of durability of design. It is probably simple, in good taste, with an interesting combination of both color and materials."

The simple, enduring design emphasized is one of the fundamental demands on the architect in the volume building market. And for a still more compelling reason—the buyers demand it.

## Tradition vs. "modern"

People make value. That is the first law of real estate. The real-estate developer knows he will sell more houses by finding out what the people want and will pay for, than by pioneering for progress. If the architect thinks the speculative builder very stupid about good design, let him remember that the builder studies house design in Sunday afternoon talks with prospects.

In the last few years there have been several architectural competitions for small-house plans, and the sponsors intended that the winning plans would be built all over the country. Naturally the contestants reached for something new, something functionally correct, something exciting. And the sponsors agreed with them, and chose winners accord-



ingly. But relatively few of the prize-winning designs were built. Why? Because the designs were too advanced. Builders were afraid of them. Buyers were afraid of them. Mortgage houses, too. Developers built a few, with an eye on the great publicity value. And they showed great crowds of people through the finished houses. But the builders knew that the thousands and thousands of interested visitors would talk excitedly about the new ideas, but would still buy "center-hall Colonials." Experience proved them right. One well-known builder, one who has occasionally served on competition juries, writes: "One of the ——— houses (mentioning a well-known competition) built in our city two years ago is yet unsold."

Hence the slow acceptance of the "modern" design. It is simply too radical a departure from familiar traditional styles that mean "home" to the average buyer. One shrewd observer has said, "They don't age well," and thus makes again the point of enduring quality. But most builders simply say that people cannot be induced to accept very radical departures, even if improvements, in so important a purchase as a home.

Don't scorn the builder as a stubborn conservative. He likes new ideas, and his prospects like exciting innovations. But the novelties must be thought of as minor things. Changes in a house, which is so wrapped up in tradition, come slowly; they cannot explode suddenly in the popular mind.

Perhaps that explains why certain elements in the modern functional designs are commonly worked into traditional designs. The corner window is one that is widely accepted. So is the large "picture" window. Simplification of line and embellishments finds many adaptations; circular windows and mirrors, too. But the flat roof is almost flatly rejected. Putting the kitchen at the front is another functional idea, often very logical, that meets sales resistance. The same goes for eliminating basements.

#### Cost vs. desire

What *do* people buy? Here the realtor has much to say, and can be more specific. The primary requirement is a compact floor plan. Here tradition has only minor influence. It is mainly a matter of economy—economy of construction, economy of land use, and economy of maintenance. And economy in housekeeping effort. In the matter of floor plan, the builder is likely to try the patience of the architect to the break-

ing point. To the builder the floor plan is all-important, for it is in floor plan that the builder satisfies his prospects' most urgent needs—two bedrooms, three bedrooms, large living room, downstairs lavatory, closet space, efficient kitchen, good circulation, side porch, and so on. These are primary, tangible demands. Every architect knows that. Every builder knows it, too, and his knowledge is in terms of the champagne taste and the beer pocketbook. Every plan is a compromise of desire and budget, and the builder works it down to cubic feet, almost cubic inches.

Accordingly, the builder is likely to make impossible demands on the architect. He will work a floor plan down to fine points—even specifying window locations and widths—then ask the architect to work out an exterior of good composition. Or perhaps not just one exterior, but a half dozen, for that one floor plan. One good floor plan might be a gold mine to the operative builder, just like one good story to the movie producer. He wants the architect to find new ways of expressing the same plan, for all the world like the movie magnate demanding that his writers find new disguises and gags to sell the same old story. Because the same old story "packs 'em in."

If the architect is accustomed to suiting the fancy of individual buyers, developing a new plan for each client, changing it for every new idea the client gets as he gradually learns about building; if new ideas must be worked out for each plan—he will find it very different in volume building. With the emphasis on sales—whether building for an unknown buyer or an individual purchaser of a lot—the demands of economy force ever closer attention to the standard solution. Even in higher price brackets and individual designs, the houses in any subdivision are likely to run more to a pattern, partly because of control of designs by the subdivider and partly because buyers tend to conform to patterns already established in the particular community.

This conformity the realtor often speaks of as "resale value." Even if a house is custom designed for an individual buyer, the realtor always leans toward a more or less typical plan, for he knows that sooner or later that house will be offered for sale. Then it must suit the "average" buyer, or its owner will take a heavy loss. The builder wants to protect the buyer; he also wants to protect his development against

slow resales. In the old days of second and third mortgages the builder had a real fear that the house would come back on his own hands; and even with modern finance methods this fear is not entirely gone. So the builder always thinks in terms of the typical house for the typical buyer. Naturally he will resist when the architect wants to incorporate the latest ideas, the unusual solutions.

In such considerations we find the explanation for the preponderant preference for Colonial plans and designs. For after all the "old favorite Colonials" in general have very economical floor plans combined with acceptable architectural style. They are durable, again both in plan and in design.

About three years ago a large number of real-estate builders, answering a questionnaire as to architectural preferences of buyers, listed Cape Cod as first choice. The country has literally broken out with a rash of so-called Cape Cod, particularly in low-cost houses. Many of them are horrible. They are stuck full of dormers and gables foreign to the tradition, but necessary to full use of space. If today the architect is inclined to scream in agony at the mere mention of Cape Cod, the fact remains that here is a typical instance of the builder's need for guidance. C. V. Bender, builder in Muncie, Ind., who has traveled the whole country studying the small house, remarks: "What this country needs more than anything else from the architect is a successor to the Cape Cod design."

Other popular styles, listed by realtors in order of preference, were: English Cottage, second; Southern Colonial, third; Dutch Colonial, fourth; American Farmhouse, fifth; Georgian, sixth. Many crimes have been committed in the names of these old favorites—proving that even such familiar styles need the hand of a capable designer.

Incidentally, in response to the question, "Do you believe the public is more critical than formerly of exterior design?", the realtors voted: yes, 307; no, 22. Surely there is tangible evidence of a basic demand for architectural service in real-estate building.

A few more remarks on preferences as to appearance. It must be remembered that a buyer's preferences are likely to be quite vague as to architectural style. He does not know authentic styling and decoration; he just wants his house to "look right." And "look right" to buyer and architect may have widely different meanings. A few generalities might be:

make the house settle comfortably on the ground; make the chimney look good and solid; make the small house look liveable. And remember that in the terrible "newness" of most subdivisions, the rambler roses and ivy have not had a chance to grow; the landscaping looks rather raw. Which is to say that the house itself makes the sale.

One point worth some stress is to give the small house all possible apparent size. Mr. Mowbray says: "If I were to mention one factor of exterior design more important than any other, I would say that the mass of the house should be as large as possible, in order to create the feeling of size. This is frequently accomplished by building in the garage, adding walls, porches, etc."

Adding to the apparent size has been facilitated somewhat by the added width of lots since the 'Twenties. Since the speculative subdividing of an earlier day it has been pretty well demonstrated that land is not so precious that we must have 25, 30, or 40-ft. lots. Sizes have gone up to 50, 60, 75 ft., frequently larger.

Perhaps it could be summed up something like this: the design skill of the architect is badly needed in the small-house field, but the architect is likely to find himself working in fundamentals, frequently minor details. Higher flights of creative genius are likely to go unappreciated.

#### Good interiors

Just a few words on a field still too much neglected: the interior decoration of the house. Home buyers need much help here.

Interior decorating is a prime example of the basic principle of real-estate building: the niceties of good design—from good exterior architecture and all that this means, down to the little frills of decorating—these are what make houses sell. They cost ridiculously small amounts when it comes to construction—and the builder likes that—but they are the difference between a quick sale and the loss of interest, taxes, tied-up capital, that always go with a slow sale. One developer tells of a house built by a small contractor in his subdivision. It was built for sale, but the sale somehow never came off. Finally, the developer bought it, to get it off the market. He found a well-built house, but one that just did not set off a spark in the prospect's eye. After some analysis he made several very minor changes—replaced all hardware with a more expensive

grade, redesigned the fireplace, made small changes in the exterior trim—and the house sold quickly. Another tells of a very well-designed house, a rather expensive one done in a dark brick. Same trouble, no gleam in prospects' eyes. He painted the whole thing white, and sold it in a month.

The architect who will really study a thousand such details, who is not too proud to listen carefully to comments of visitors at a demonstration house, can make himself tremendously valuable to the developers. If it seems a trifling business, perhaps there is inspiration in the hundreds of thousands of small houses built every year. Maybe there is more inspiration in the thought of pride of ownership of a like number of average families, who cannot appreciate a fine French design, but who can thrill at a well-turned bay window or a deep red shutter.

And always and forever there is the matter of cost. The realtor is a realist in the everlasting compromise between cost and desire. What the public wants, he knows, is only a starting point—the problem is to make the buyer want what he can pay for. This is where the architect can be of real assistance. The builder knows the solution will be found in compact plans, in a house well equipped but still full of compromises on equipment matters. It is likely to be touch and go when it comes to the dotted line, for the prospect will have been severely torn between his desires and his budget, and it is difficult to keep his enthusiasm high through the struggle. If the architect can wrap the bundle of compromises in a charming package, one that stimulates a pride of ownership, then he has made a sale.

#### Plus values

In general, as every one knows, the trend is toward less house and more convenience. Edward W. Tanner, who, as head of the architectural department of J. C. Nichols Investment Co., has designed literally hundreds of houses, puts it this way: "The best way to describe this change is to say that today we try to build a highly livable 100-year house, whereas 10 years ago we were trying to build sturdy 200-year houses. The American public is perfectly satisfied with a 100-year house, and would rather have the fine mechanical installations, along with attractive finishings, than to have a thoroughbred 200-year house."

Many developers might change the figure to 100 years, and 50 years for the

modern house. As a matter of fact, in the past the useful economic life of a house in many cities has proved to average about 35 years.

A few years ago it would have been unthinkable to build a house without four bedrooms, or, at the least, three. Now three is considered normal and two-bedroom houses are almost as common as three. If we agree on three, the rest of the "typical" house would be something like this: a good-sized living room (perhaps 13 by 20 ft.); dining room of modest size; kitchen of good dimensions (8 by 10 will do, but 10 by 12 ft. is better); downstairs lavatory; side porch. For the upstairs: one "master bedroom" of generous proportions, one large enough to be furnished with one double bed, and a third which may be quite small; one bathroom; and all kinds of closet space.

One very well-known builder, by the way, puts closet space first of all in his list of things that make houses sell; ample closet and ample wall space both come ahead of any consideration of esthetic qualities, in his mind, and his development of fine houses is famous all over the country. Closets should be deep, too. One organization studied sales features intensively, and now insists that bedroom closets be nearly 3 ft. deep—large enough for "picture hat" boxes. It also insists on two closets for each principal bedroom. Every speculative builder knows he must satisfy the women, and that women can forget almost anything else if closets are large enough. That is, they'll forget everything but kitchen cabinets; they rank with closets.

As to garages, there is considerable difference of opinion among developers. The attached garage at the front is very logical, as to both economy and convenience, but some subdivisions still forbid it entirely. The attached garage placed farther back is fully accepted. It widens the house at little extra expense; indeed, often at virtually no expense, for it permits a smaller first story while providing a space for a third bedroom upstairs.

This idea suggests another planning innovation that is widely popular in the small house—the combination of dining bay and living room. Buyers commonly insist on some dining space (beyond the breakfast alcove in the kitchen) but they have quickly accepted the logic of cutting down this little-used room. They still want, with it, the room for a breakfast table, or breakfast bar, in the kitchen.

Many builders are subject to criticism

in the design of the kitchen. Nobody needs to be told that kitchen planning means the difference between convenient working and hours of extra kitchen drudgery for the housewife, but thousands and thousands of houses are still being built with poor kitchen layouts. This in spite of the fact that most real-estate brokers know that kitchens and bathrooms are primary sales features.

It isn't just a matter of sufficient kitchen cabinets—which do cost money—it is first a matter of placing doors, windows, plumbing, to permit proper arrangement of the primary kitchen facilities. A fine-looking house is a source of continual satisfaction to the feminine buyer, but before she becomes a buyer she will think carefully about the hours in which she will be too busy to think about a beautiful exterior.

No capable architect needs to be told, either, that wall spaces throughout the house need careful study. The point to be stressed here is that in the mass market, where all dimensions are cut to the minimum, the importance of good wall spaces is greatly increased. The builder who has spent many Sunday afternoons with his public has seen scores of women struggle with mental calculations as they try to remember each piece of furniture and find a place for it. Room layouts that call for unusual types of furniture are dangerous, for the \$6,500 buyer usually cannot afford to junk what he has and start afresh.

Now a word or two about equipment. It goes without saying that almost every new gadget is desired by the public. When it comes to what is necessary, instead of merely desirable, local customs are the only safe guides. A few not too dangerous generalities are:

Automatic heating is virtually necessary in the \$6,500 to \$7,500 house. But many houses just under those prices are still sold readily without it. "Air-conditioned" heat is desirable, but not strictly necessary.

The buyer will expect an insulated house, with tight, weather-stripped windows. Builders commonly furnish screens in most sections of the country, but not storm windows. Some other things that must be considered necessary are: fireplace, a laundry equipped with trays, automatic water-heating system, thoroughly adequate wiring. A downstairs lavatory is almost a necessity, and is more in demand than a second bathroom upstairs. Many other equipment items are commonly demanded, and builders try to include all they can, for

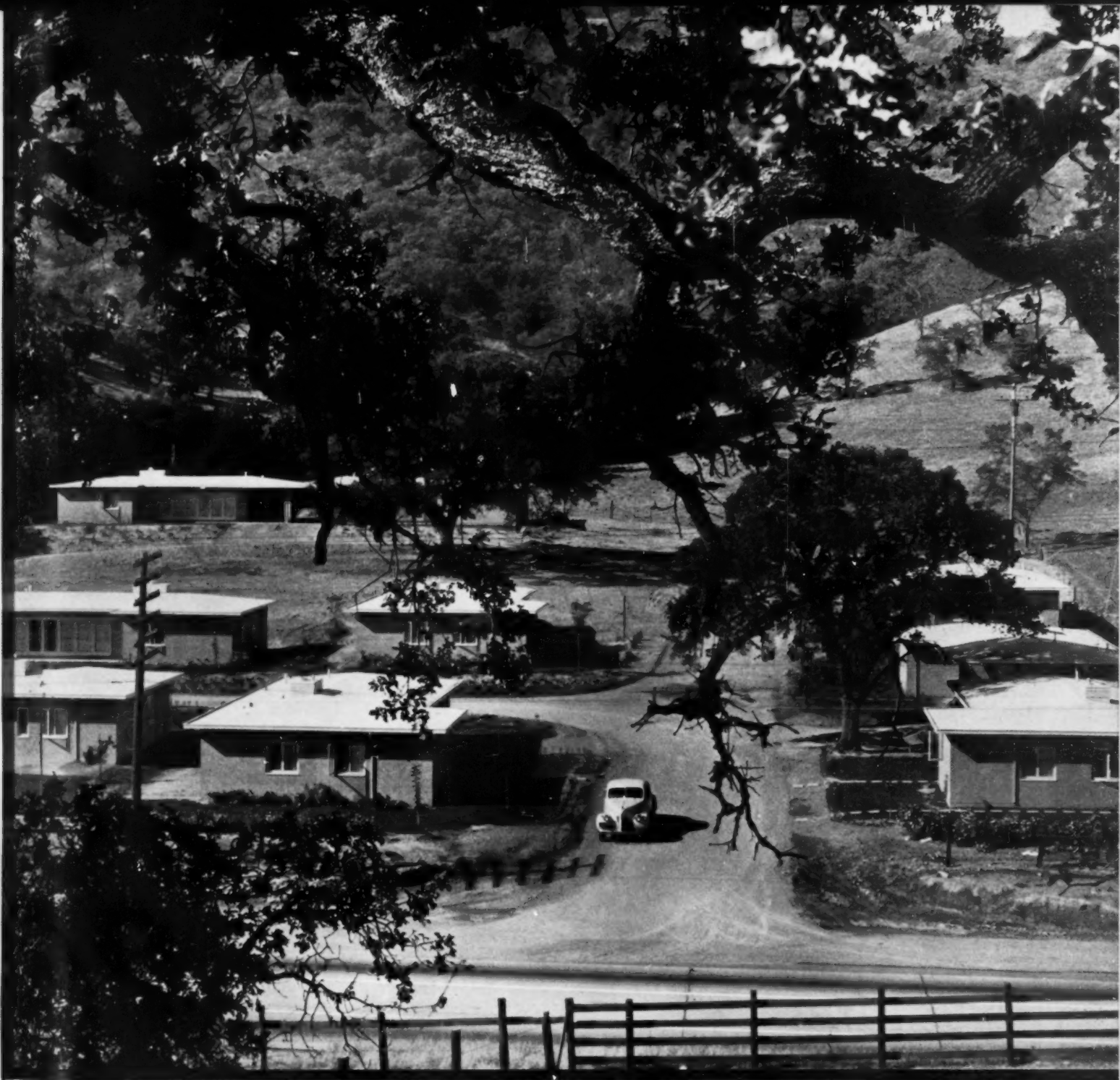
it is true that buyers of today prefer convenience to mere space.

#### **Construction economies**

It all puts a heavy strain on the designer, particularly in the matter of construction costs. In the operative building field there is intensive search for cost-cutting methods, and the architect will find some of the new ideas affecting his designs. For one thing, there is ever more use of standard parts, standard window and door frames, standard mill-work units of all kinds. One builder, for example, insists that every house he builds must accommodate a certain large kitchen unit of sink and several cabinets. He has found it a good sales feature for its large size, yet he buys it cheaply in large quantities. Room dimensions are figured closely for economical use of lumber. Everything possible is done to save labor on the job.

Builders are finding many ways to cut labor bills: the use of standard parts is only one of these ways. In the real mass markets they are learning to schedule various trades through a row of houses, so that each can work with a minimum of lost time and waste motion. They are teaching certain workers to do certain jobs, having, for example, several types of carpenters each trained to one task. The architect must expect, therefore, to co-operate to the full in working toward standardization, if for no other reason than that each new wrinkle of equipment, materials, or decoration slows the worker until he learns how to handle it. In the kind of operation where the same crews build most of the houses, the architect can find full scope for his engineering talents, contributing his own ideas to construction efficiency.

Such is the job of the designer in the operative building field. Realtors need the architect, but many of them say that most architects have not seen their side of the picture, have resisted the standardization idea. Many architects, on the other hand, have found that standardization has simplified their own work, for it is possible to develop more or less stock solutions to many typical planning problems. It is too much to say that they can simply reach in the file for everything, but once the standardization idea is accepted, the files will make it much easier to turn out the kind of design that will please the builder and his buyer. They find, too, a higher percentage of conferences turning into actual deals.

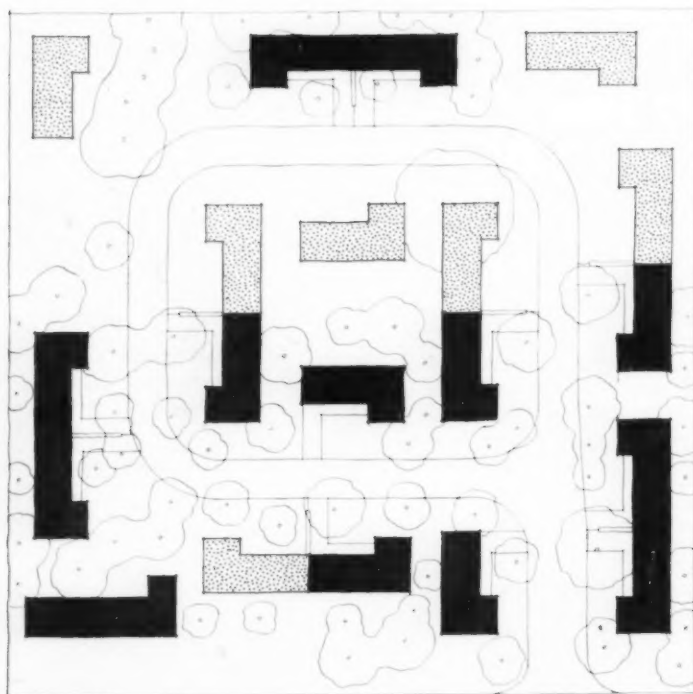
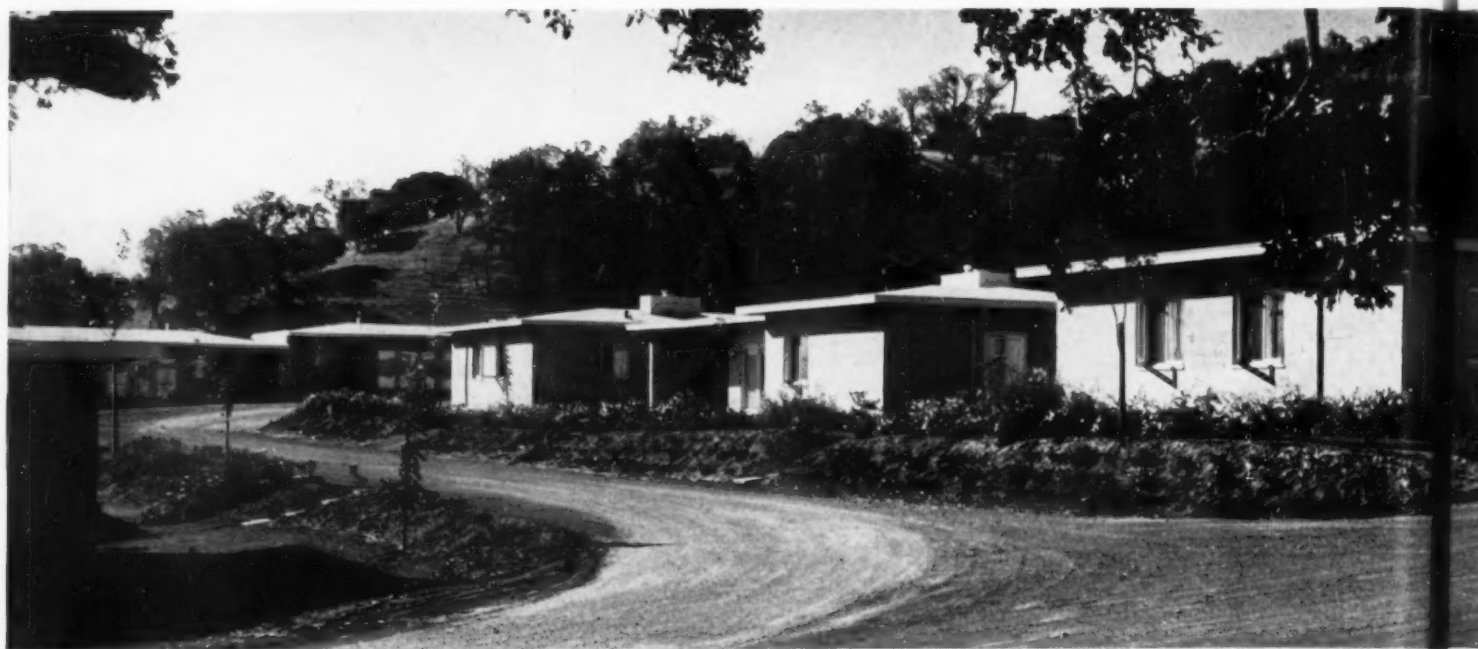


*Waters & Hainlin*

# PORTFOLIO

## HOUSES IN CONTROLLED DEVELOPMENTS

All plans in this portfolio section (pages 53 to 88) are reproduced at the scale of  $1/16'' = 1'-0''$ .



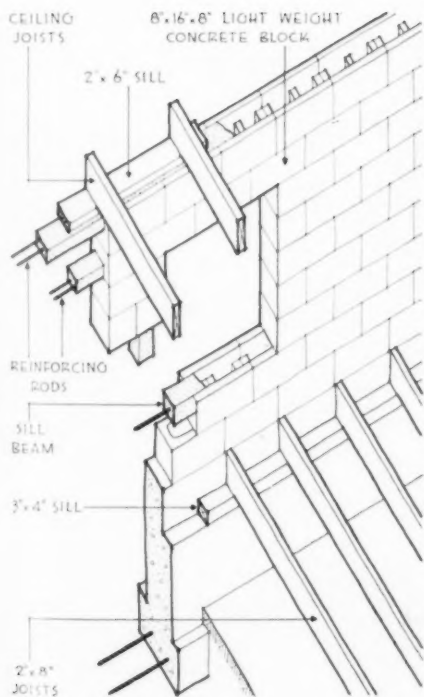
### FREDERICK L. R. CONFER, Architect

THIS is a whole new community of single-family houses, all built from the same plan (or its exact reverse) both as separate units and in pairs. Developed by a private investor to rent to the families of officers stationed at Hamilton Field, only a quarter of a mile distant, the group as now built consists of 14 dwelling units. In the complete project (indicated in the shaded portion of the plot plan at left) there will eventually be 21 houses.

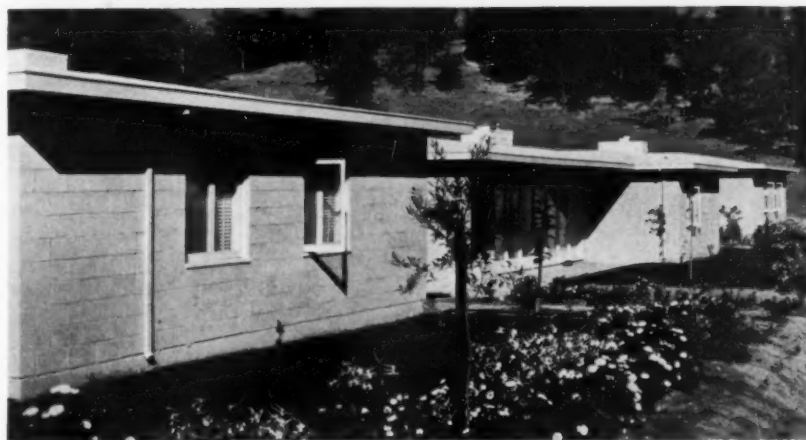
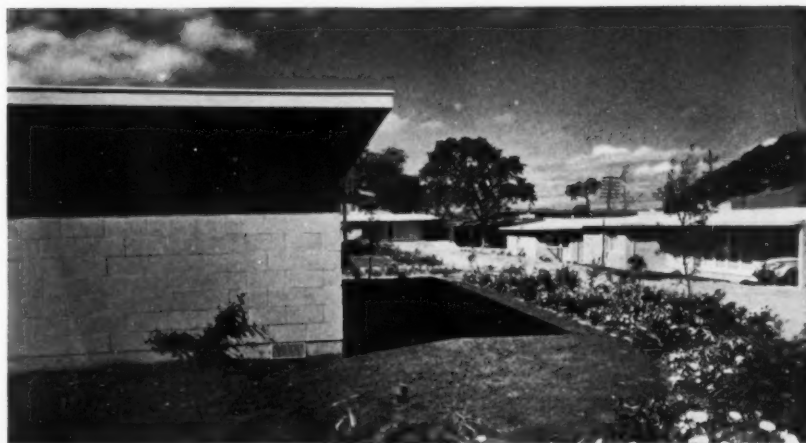
As the houses are beyond city limits, local planning ordinances did not apply. However, from the investment standpoint, it was decided to develop the plot in such a way that the houses could be sold as individual units, if necessary. Therefore, setbacks, lot coverage, restrictions, etc., were designed to conform to FHA standards and the ordinances of the nearest city.

The exterior roofing material, laid over standard wood roof construction, is tarred roofing felt with a white crushed-marble gravel topping. This both reflects the hot sun rays and provides a 1-in.-thick insulation layer. Exterior walls are painted shrimp pink. All trim is white.

Landscaping of the entire project was done by Ned S. Rucker, Landscape Architect. Concrete stepping stones lead to each rear terrace and each entrance loggia. Each house has a private front and rear garden, but all are coordinated to form a unified planting scheme.



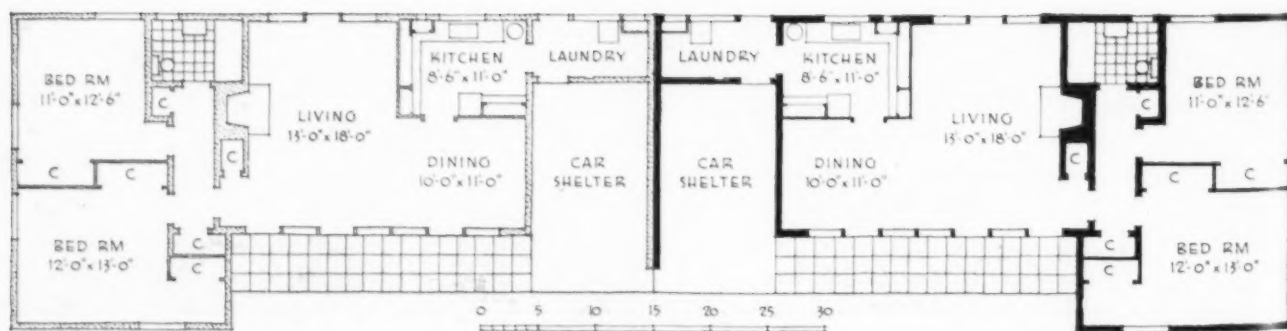
The construction system employs durable materials that are modest in expense and require a minimum of upkeep. Set on concrete footings, the walls are of reinforced 8-in. concrete-block construction. All floors are finished in oak, except in kitchens and baths, where linoleum is used.



Photos by Waters & Hainlin and Mary Edwards & Norman Donnat



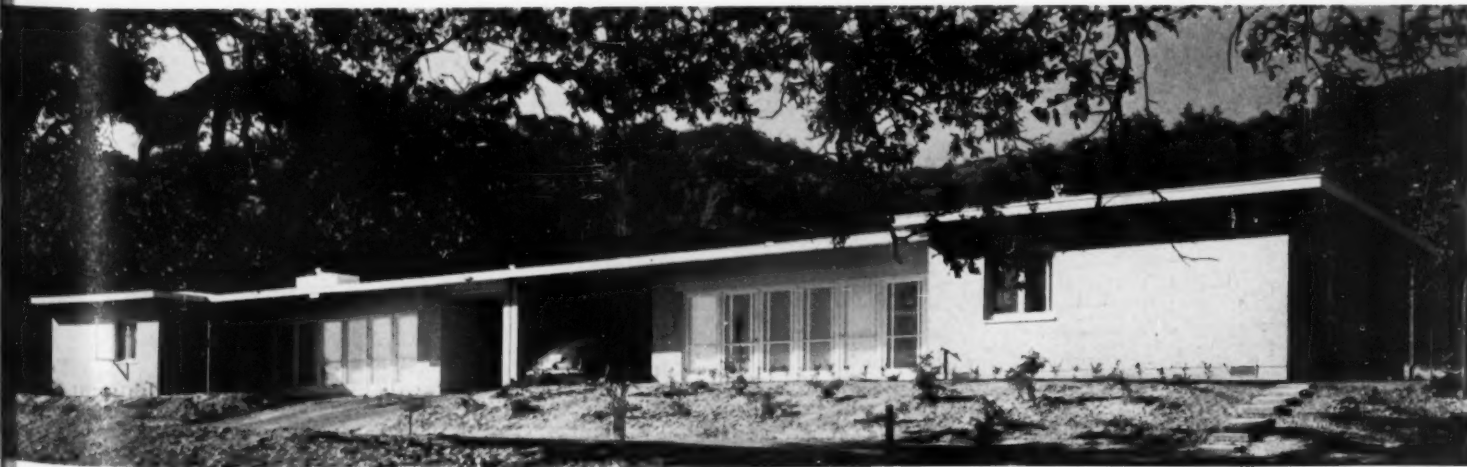
Photos by Waters & Hainlin, Mary Edwards & Norman Donnal

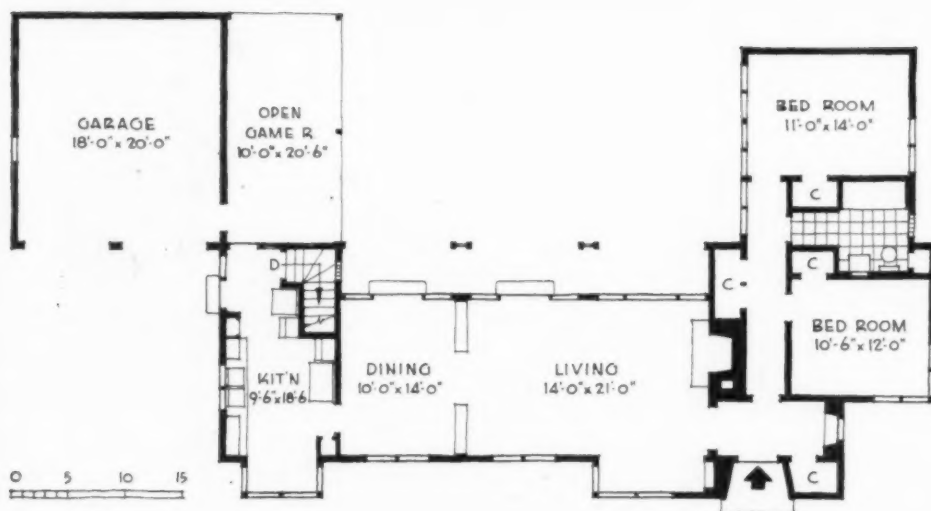




**FREDERICK L. R. CONFER**  
Architect

INTERIOR partitions, of a special patented design, are shop fabricated. In the living-dining area, a mahogany-surfaced plywood is used for the finish. Elsewhere, surfaces are of either insulation board or fir plywood. The concrete blocks, which serve as interior finish along outside walls, are painted. Ceilings are of insulation board.





Photos by Roger Sturtevant

PLANNED around a court to provide outdoor living area adjacent to indoor living area. The plan is organized so that sleeping quarters are separated from the rest of the house. The house was built for sale.



GEORGE WELLINGTON STODDARD, Architect



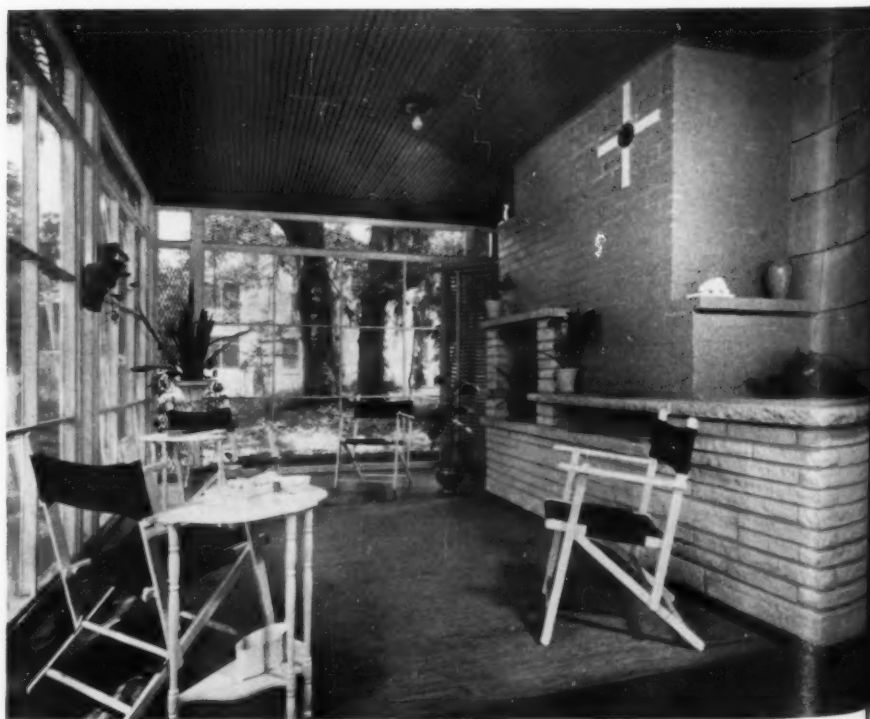
# TEXAS

## RIVER OAKS, HOUSTON

Photos by Elwood M. Payne

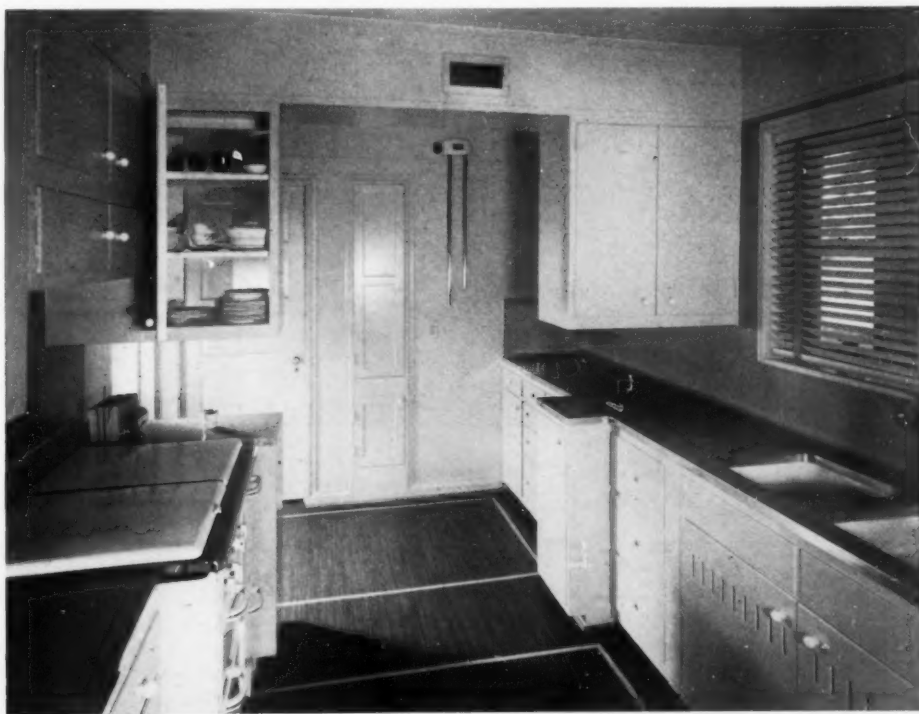


MackIE and KAMRATH, Architects





MR. MACKIE'S own house. Economy of construction and low-maintenance considerations are as noteworthy as the efficient organization of plan. The house is built on a concrete slab. Shingles are stained light gray; trim is white; the built-up fireproof roof has a white limestone topping. All rooms have cross ventilation. The generous screened porch at the rear, equipped with a barbecue fireplace, is the center of summer living.





**KIMBALL and HUSTED, Architects**

A CLEVER and unconventional arrangement of rooms in a house that is traditional in style. This arrangement gives privacy and good exposures to the living and dining rooms, and permits direct access from kitchen to entrance hall. The garage, at lower level than first floor, is reached by stairs from hall.



## A black and white photograph of a two-story white house with a portico supported by columns. The house has a decorative cornice and a central square window above the portico. The house is surrounded by trees and a lawn.

The architectural floor plan shows a two-story house with a garage and a deck. The second floor features three bedrooms, a bathroom, and a central staircase. The first floor includes a living room, dining room, kitchen, a second bedroom, a bathroom, and a central staircase. A scale bar and a north arrow are also present.

**SECOND FLOOR**

- DECK
- BED RM 12'-6" x 16'-0"
- BED RM 12'-6" x 13'-6"
- BED RM 14'-0" x 16'-0"
- DR RM
- Staircase (Up/Down)
- Closets (C)

**FIRST FLOOR**

- GARAGE 18'-9" x 20'-4"
- KITCHEN 9'-0" x 11'-0"
- BR RM 8'-6" x 11'-0"
- LIVING 14'-0" x 24'-0"
- DINING 12'-6" x 15'-0"
- Bathroom
- Staircase (Up/Down)
- Entrance
- Closets (C)

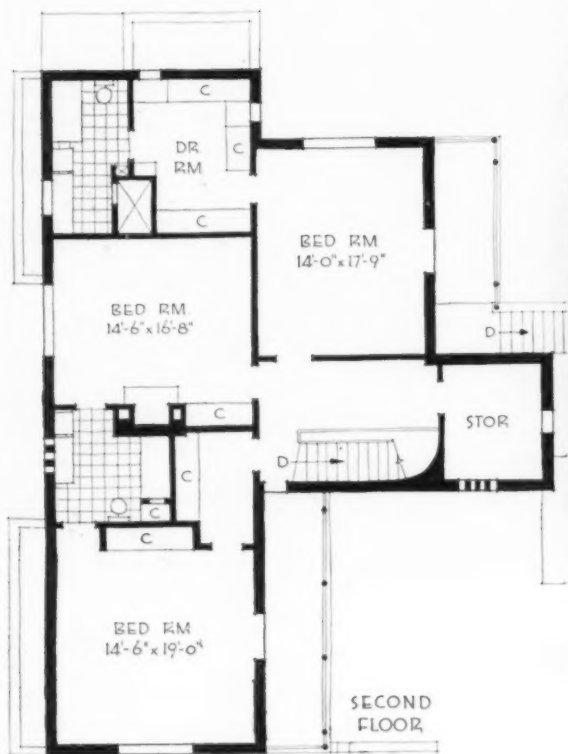
0 5 10 15

ARCHITECTURAL RECORD



B. Kroeger

A CONTEMPORARY version of the Greek Revival style, treated with great simplicity. A 35-ft. setback from the front lot line was the only controlling factor in the design. Construction is of common brick veneer, painted white. Landscaping was handled by Gertrude Webster.

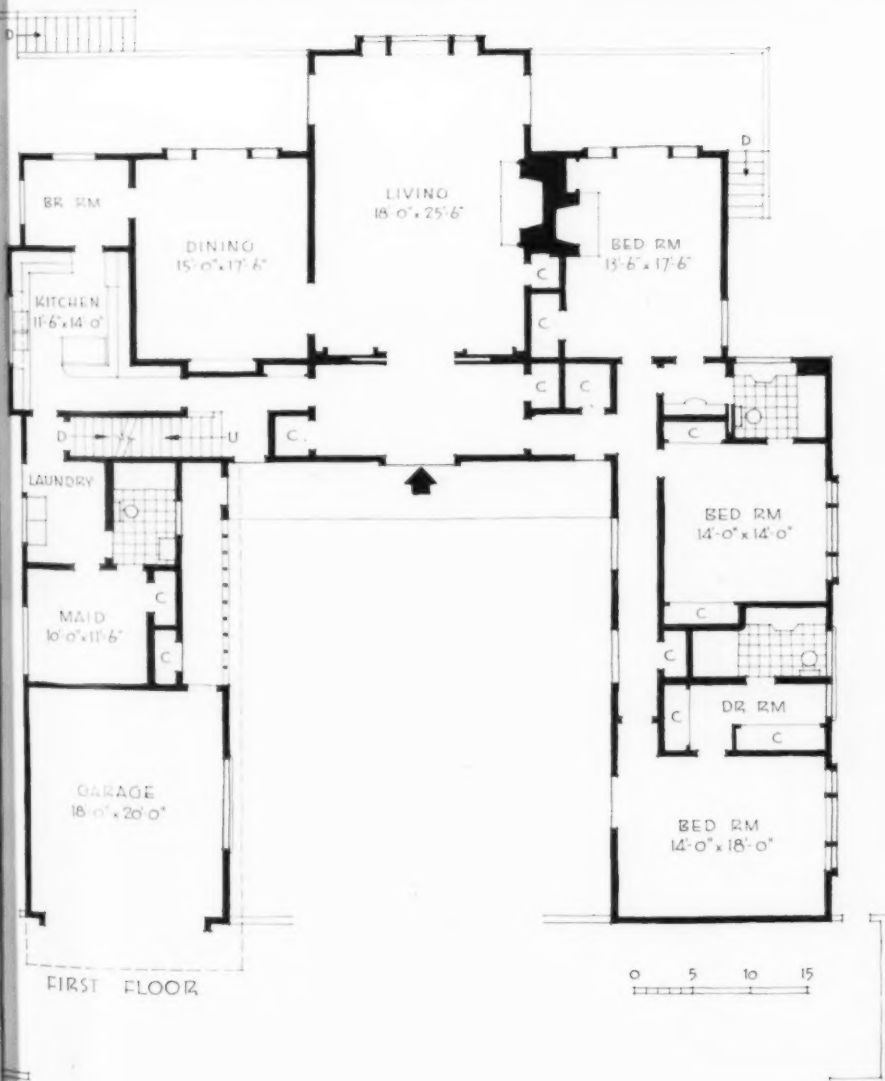


**DONALD McCORMICK, Architect**





Photos by W. H. H. & H. H. H.



### FREDERICK L. R. CONFER, Architect

A U-SHAPE-plan house on a busy thoroughfare. The wall of the forecourt both provides privacy for the living quarters and forms an enclosed living garden. An unusual plan feature is the second-floor play area over the service wing, above which a canvas roof rolls back to open the room to the sky. The exterior walls are of beige-gray stucco; the trim is white. Gray-blue terra-cotta shingle tile are used on the roof.

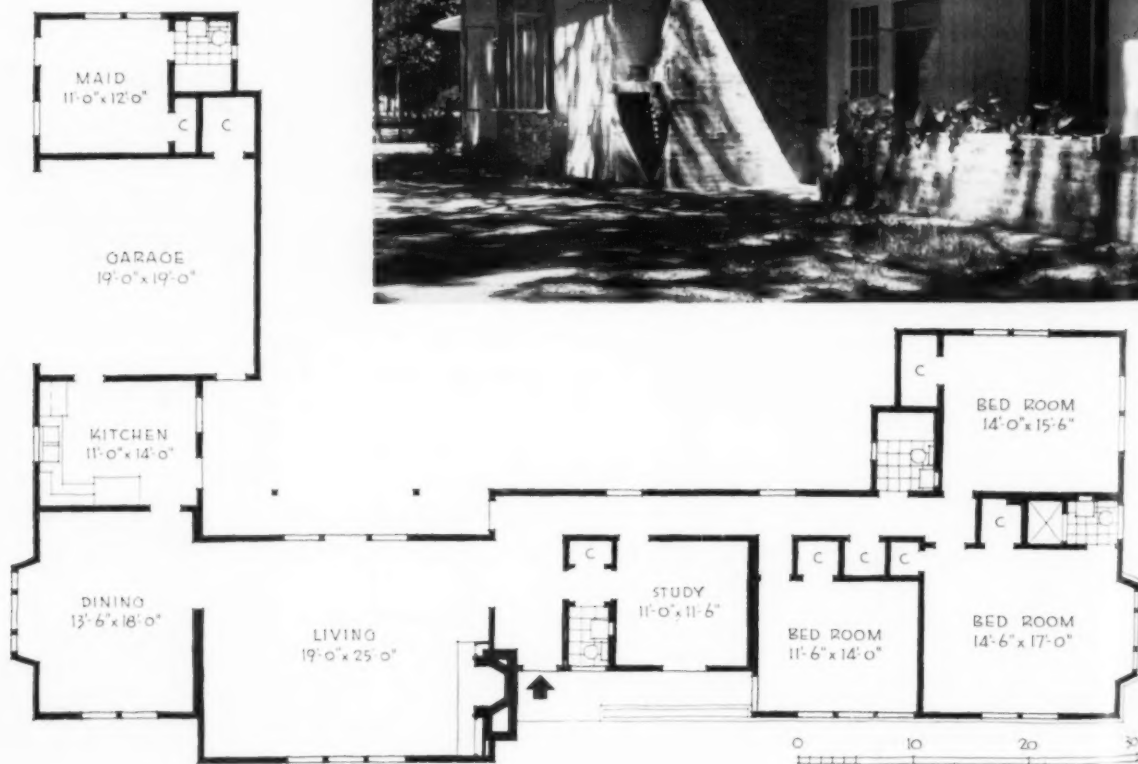


Photos by James Skidmore



### 1. B. W. CRAIN, JR., Architect

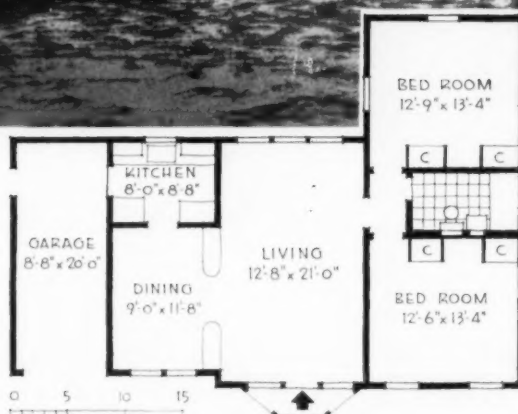
A SPREAD-OUT plan which provides cross ventilation for each room in a climate where such provision is almost mandatory. Construction is frame except for the brick wall under windows on front elevation. Exterior is white, with dark maroon trim; brick is salmon tan; roof is surfaced with white gravel. The house was built by the development company for sale.





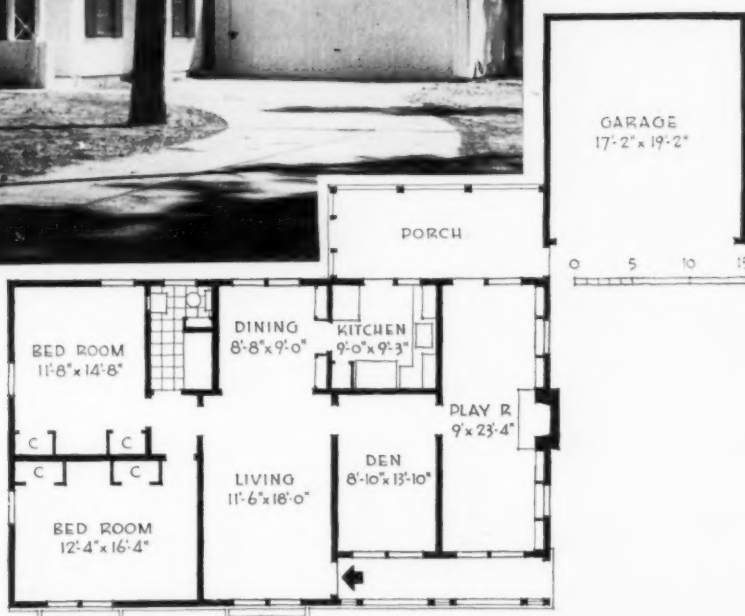
## 2. TALBOTT WILSON • IRWIN MORRIS Architects

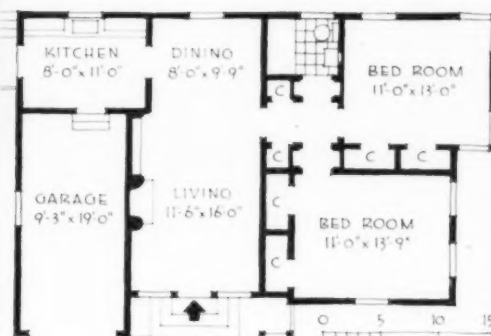
A COMPACT two-bedroom house which was built for sale. Main rooms have cross ventilation. Construction is inexpensive, of frame. Exterior is painted white with contrasting trim. The roof has a white gravel surface.



## 3. B. W. CRAIN, JR., Architect

DESIGNED for a specific owner, whose requirements were very definite. One of these requirements was that there be a dining alcove just off the living room; another was that the playroom be as far as possible from bedrooms. Restrictions required that the house be set back 50 ft. from the front property line.



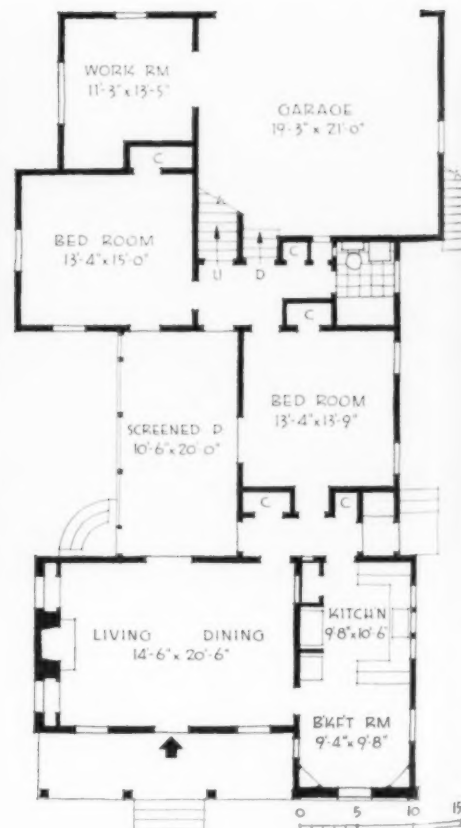


### 4. FRANK C. DILL, Architect

ONE OF A group of five speculative houses built by the development company to demonstrate the value of architectural service on small homes built for sale. All rooms have cross ventilation. Note provision of ample closet space. The house is frame; exterior is white; shutters and wood shingle roof are painted purplish rust color.



Photos by James Stidmore



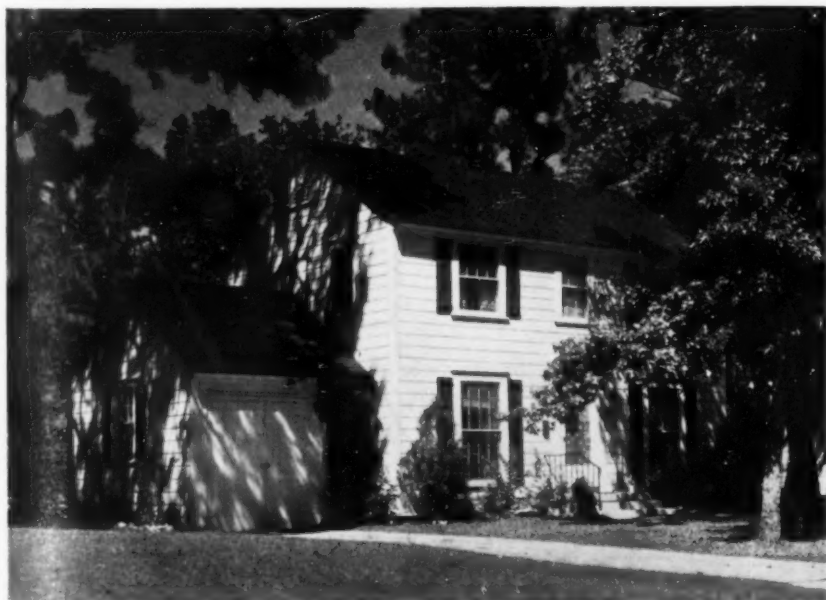
### 5. MARY ISABEL MOUNT, Designer

A CONTEMPORARY expression of early Texas architecture, designed for a family of three. A feature of the plan is the living porch opening off the living room. Two-car garage is at rear. Siding is flush on porch, beveled elsewhere. White exterior; gray trim; blue-green shutters.



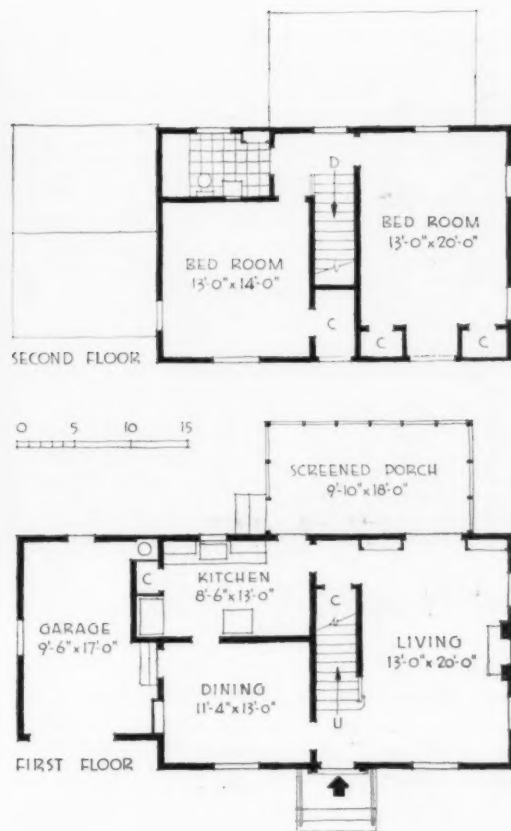
## 6. DELWIN V. JAMES, Architect

PLANNED to meet the needs of a specific family with a limited budget. The house faces south to take advantage of the prevailing breeze. The lot size and the setback restrictions determined the over-all width of the house and, consequently, the arrangement of rooms.



## 7. LEROY HAYES, Architect

A TWO-STORY, two-bedroom house with screened porch opening off living room; built for sale. The entry provides direct access to both living and dining rooms and to the stairway. Exterior is clapboard, painted white; shutters and roof are dark green.



Frederick Kacser, 2nd



Charles C. Bradley



### BEATTY and STRANG, Architects

Two HOUSES by the same architects, who report: "In most cases, the persons who have built homes in Frost Woods have built modern dwellings because they wanted them regardless of restrictions." At present the Frost Woods Home Association encourages "exterior designs . . . in harmony with the exteriors of the houses already erected in the immediate locality."



Fred Kirschner



Photos by Fred Kirschner

### HART and RUSSELL, Architects

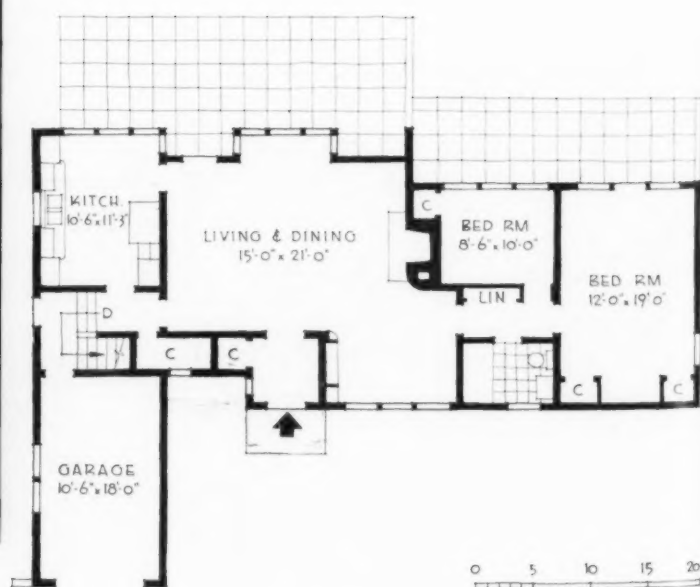
DESIGNED for a family of four; Williamsburg character specified by the owner. The small room between the living room and kitchen serves as both study and children's playroom. In the basement, a half story above grade at the rear of the house, are servant's room and bath, heater room, and photography darkroom. Brick veneer over frame; dark-gray asbestos shingle roof.



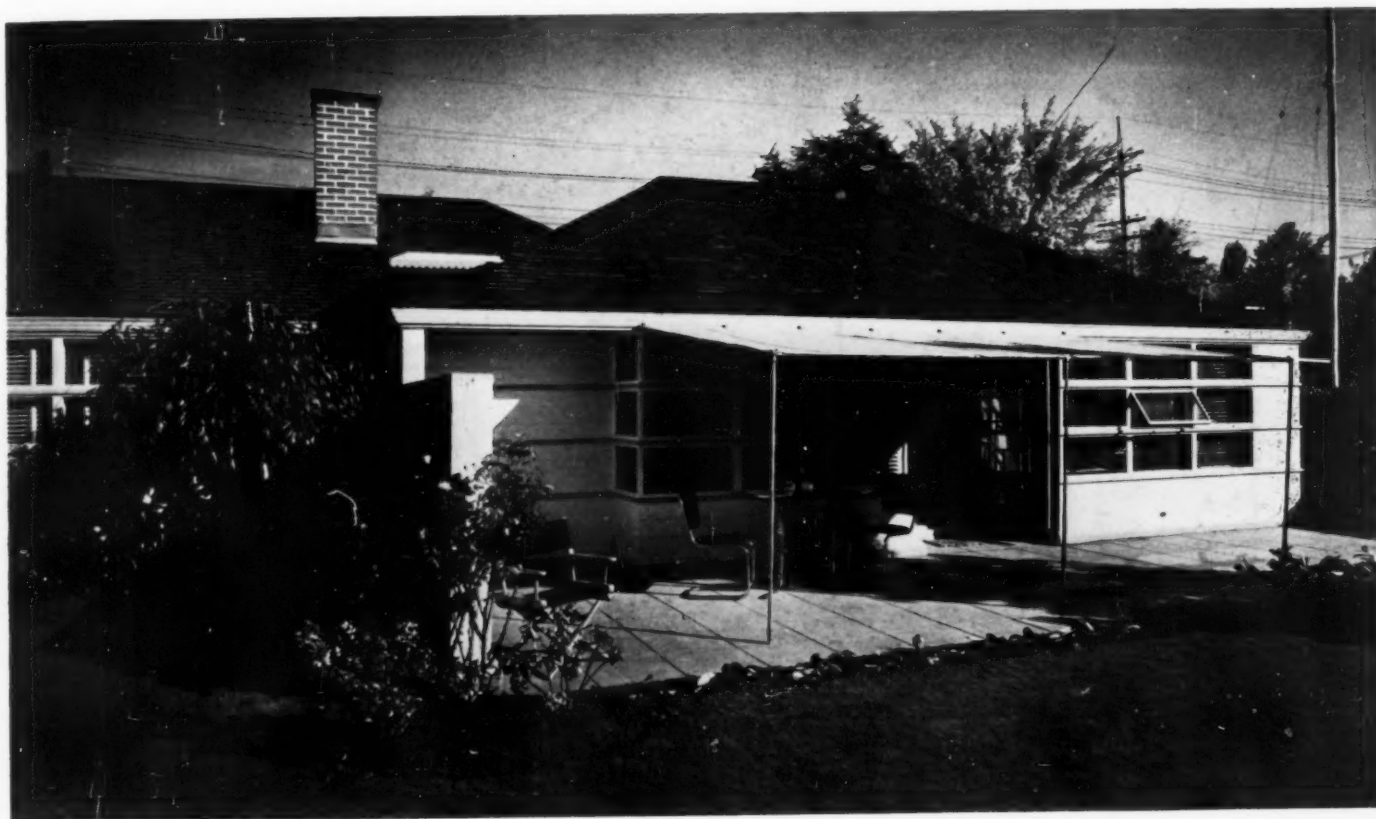


Photos by Roger Sturtevant

Service entrance

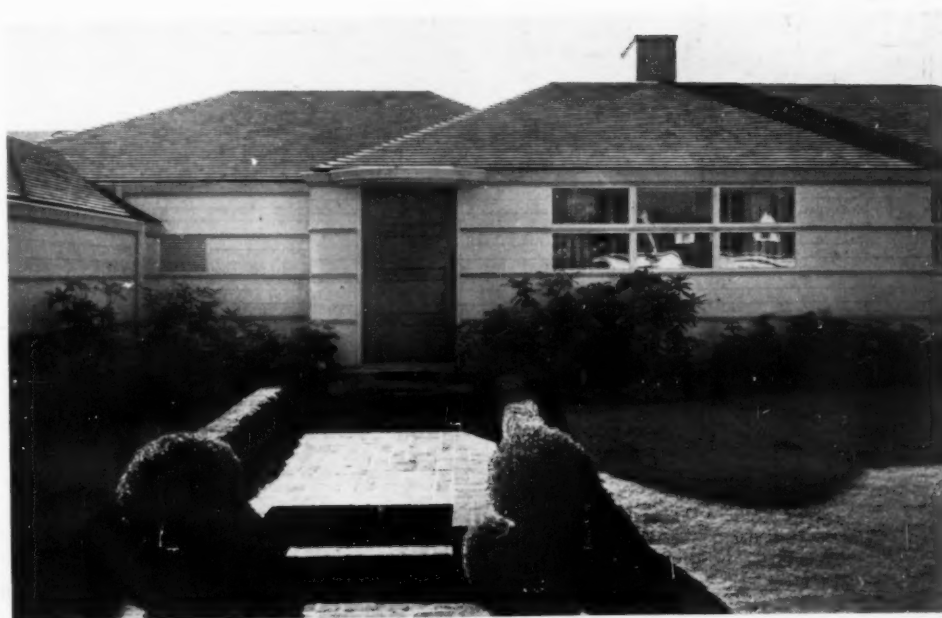


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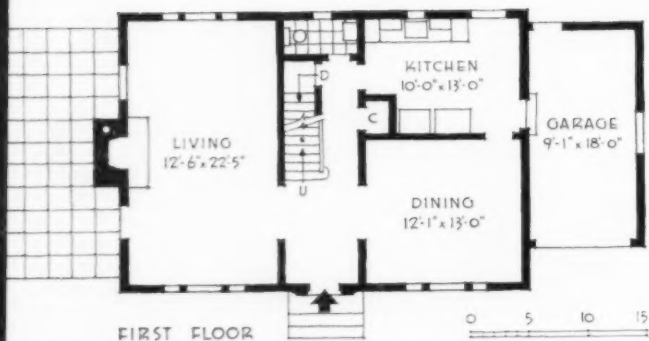
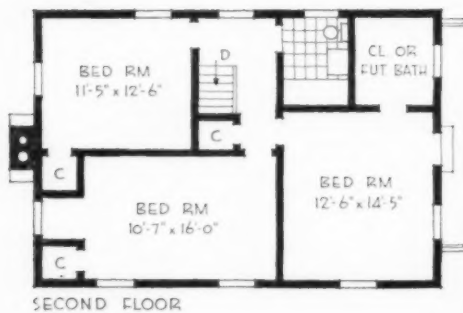
**HERMAN BROOKMAN and HAROLD DOTY, Associate Architects**

A ONE-FLOOR, two-bedroom house, equipped with ample closet space. Deed restrictions required a 25-ft. setback on the front, with a minimum of 5-ft. clearances on each side, and at least 7 ft. at the rear. The house is of frame construction with exterior walls painted light salmon color. Trim, sash, and doors are of Chinese red with an overglaze of French gray.



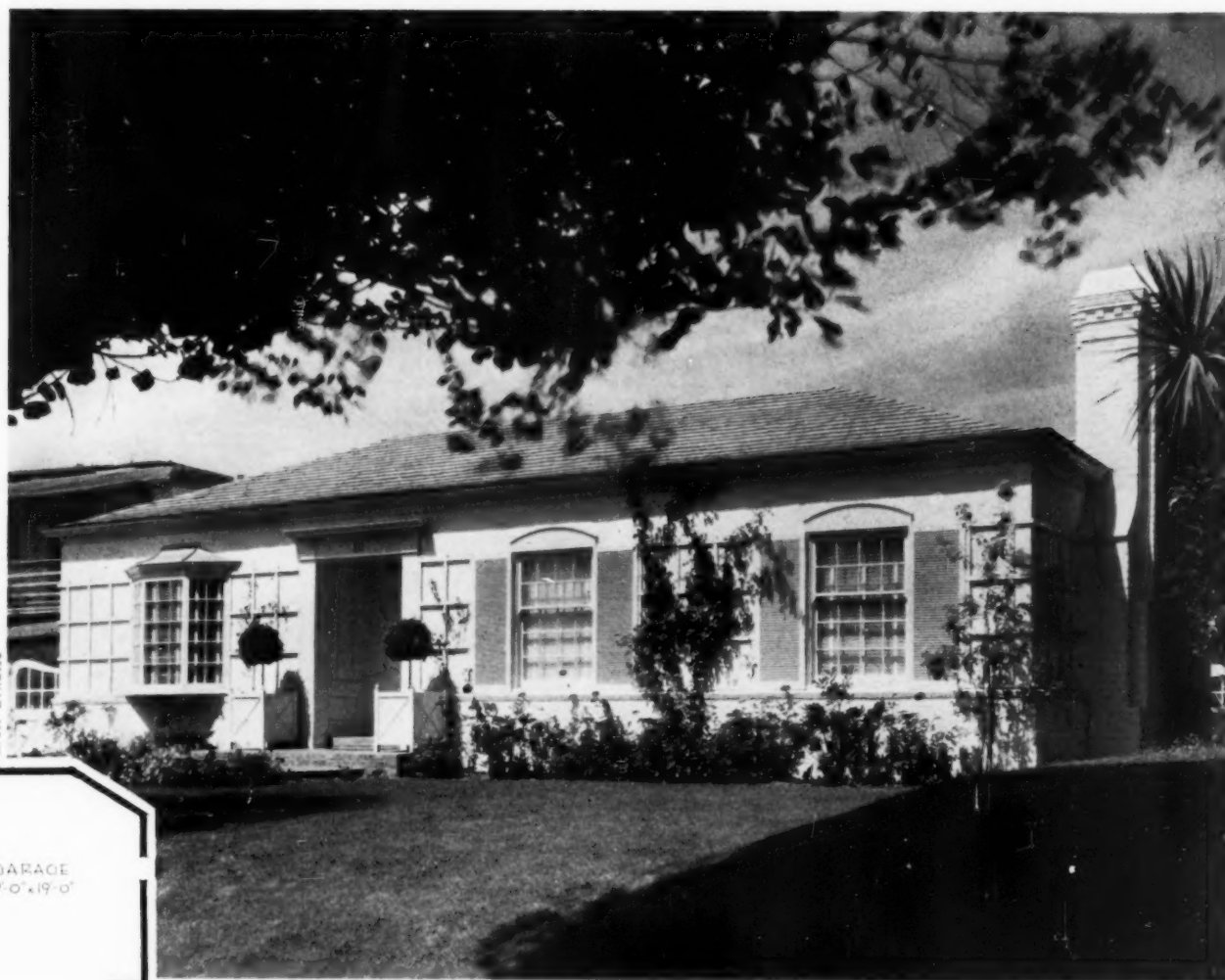


IRWIN S. CHANIN, Architect



BUILDING TYPES

A standard plan that has proved a best seller, with good resale value. Among the features that attract are central hall, downstairs lavatory, plenty of wall space for furniture, and room in the kitchen for a breakfast table.



Mott Studios



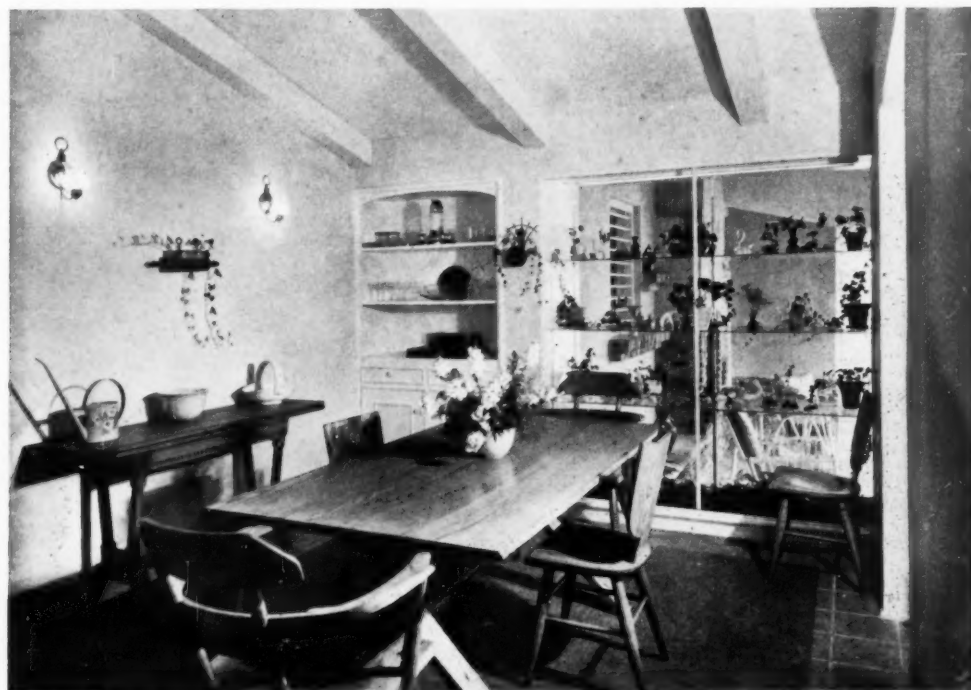
ALLEN G. SIPLE, Architect



A three-bedroom house on a small lot. The moderate California climate allowed a rambling layout of rooms on a single floor. Organization around a court provided for outdoor living and privacy.

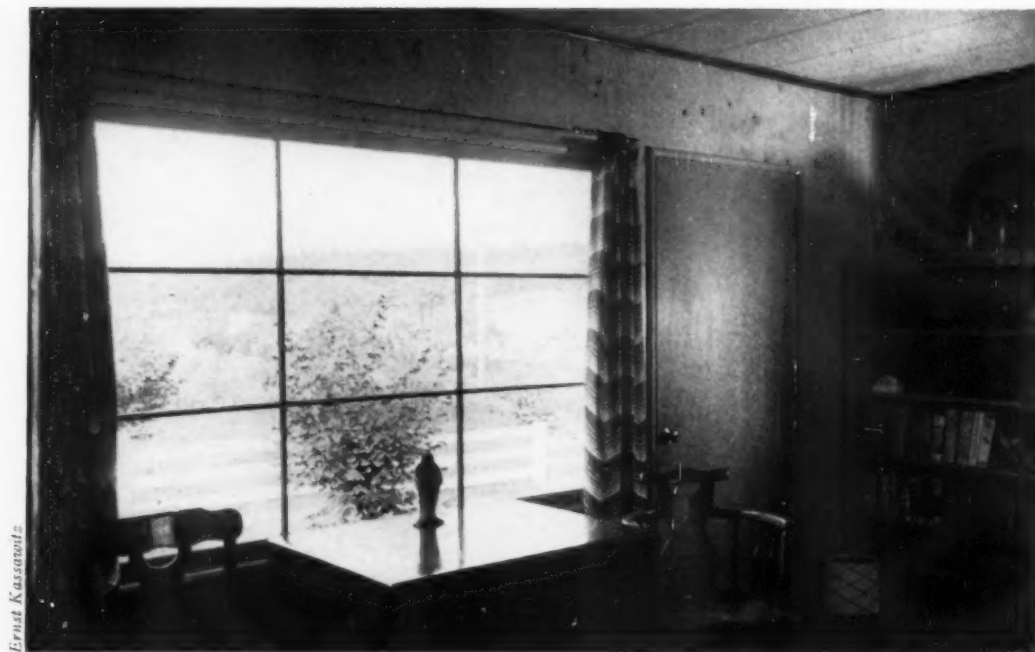


Photos by Ernest Graham



### ROBERT M. LITTLE, Architect

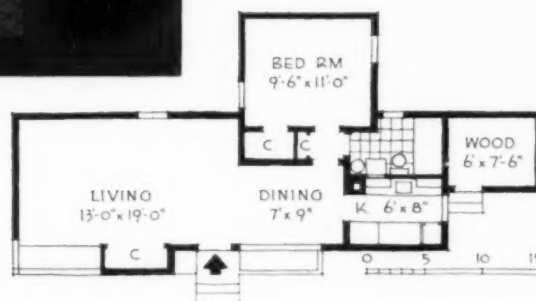
LOCATED in a development, but designed for specific clients with special requirements. The clients wanted a Mexican ranch house; they also asked for a detached two-bedroom guesthouse. A loggia ties this unit to the rest of the house.



Ernst Kaszavoltz

### SMITH, CARROLL & JOHANSON, Architects

A COMPACT one-story house in a restricted residential district just outside city limits. Minimum setback from front property line is 20 ft. in this development. The house was built for a specific owner.

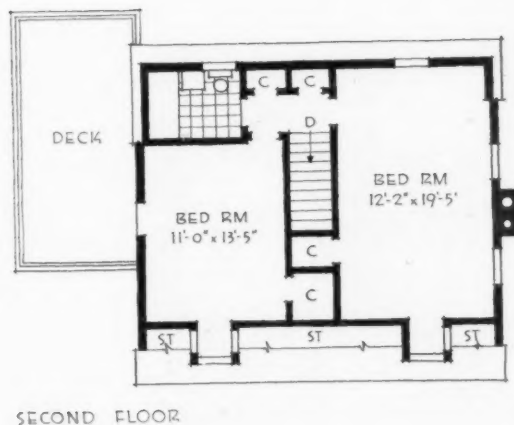




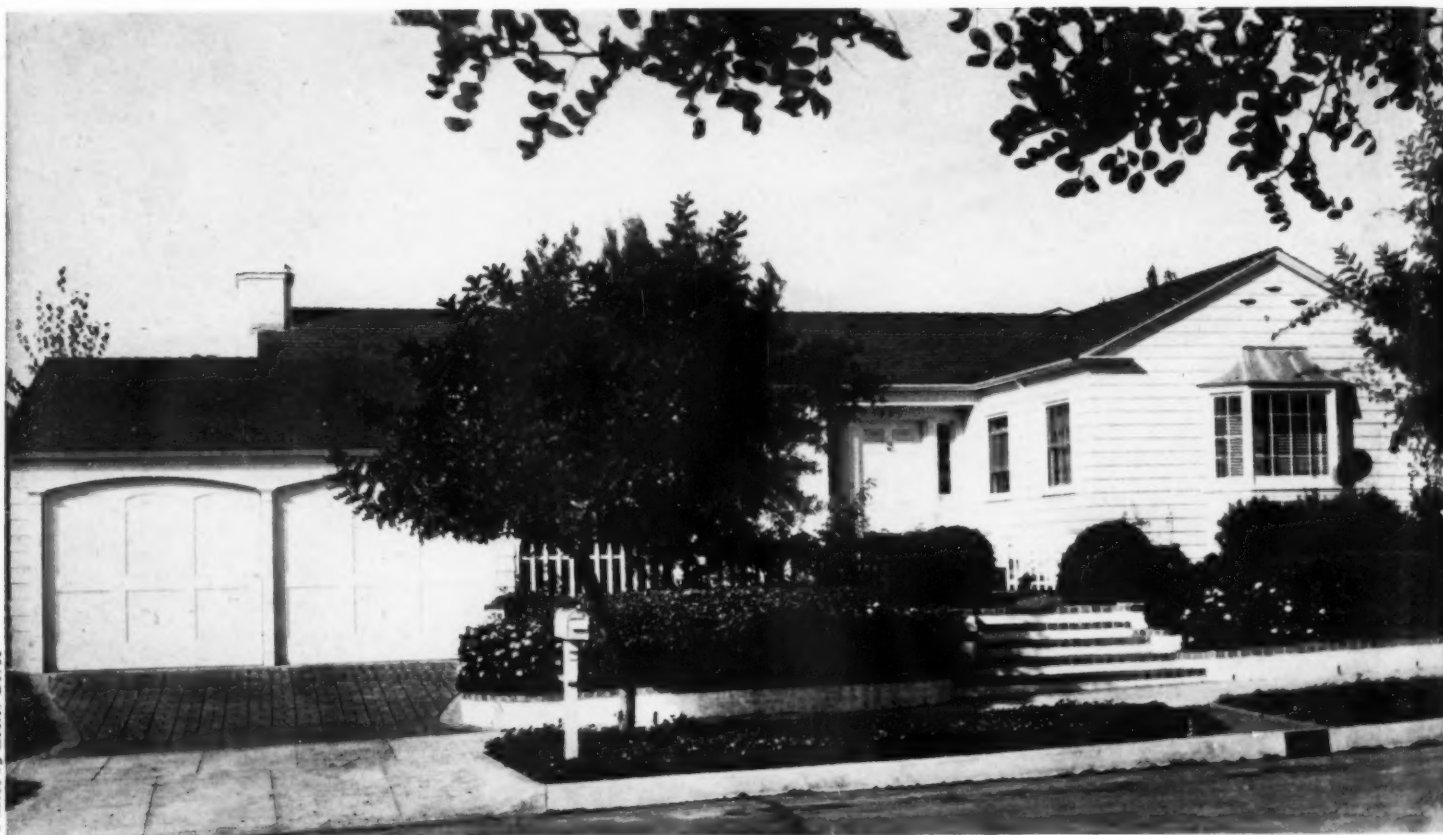
Richard Garrison

IRWIN S. CHANIN, Architect

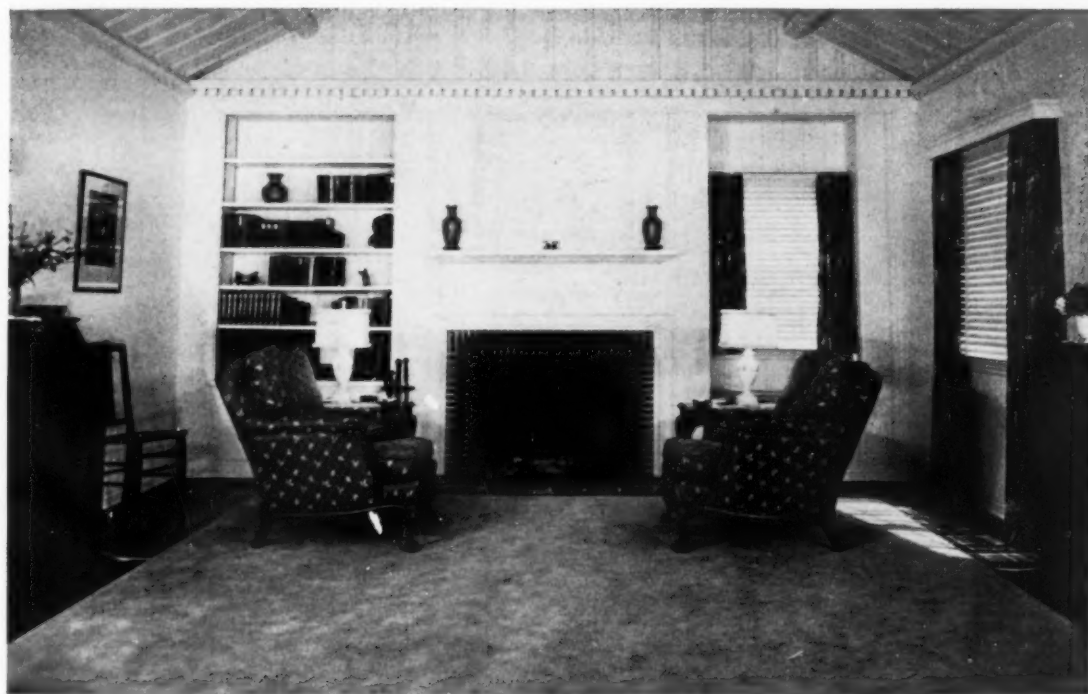
A VARIATION of the popular "Cape Cod" house, built for sale. Not only is the floor plan compact, but the typical disposition of rooms provides spaces for the kind of furniture that a prospective buyer usually owns.



Photos by Lester Bores



Living room (right) has a white board-and-batten wall at the fireplace end. The porch (below) opens off one side of the living room and overlooks garden.



FREDERICK N. CLARK, Architect





THE COMPLEAT HOUSE, INC.

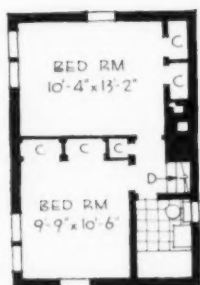


PHILLIP MAHER {Consultant  
LEONARD WAYMAN {Architects

E. B. HAWKINS } Associates  
ERNEST BENKERT }



IN THE ORIGINAL platting of this property, where the average lot is 50 by 110 ft., special emphasis was laid on provision of seclusion for houses and privacy of lawn and garden area. Garages, projecting toward the front property line, form dividing walls between adjacent lots and, for the houses next to them, serve as garden walls against which plants may be grown (see photos at left). Setback distance is the same for all houses. Despite the variety of exteriors, the over-all effect is one of unity, due to the fact that one general character is maintained throughout (see top of page). To date a few basic plans have been used with variations such as reversal of plans, use of different exterior treatments, and different roof lines (the two houses shown on opposite page were built from the same base plans). All the houses are built speculatively with complete architectural control exercised.



UPPER FLOOR



FIRST FLOOR

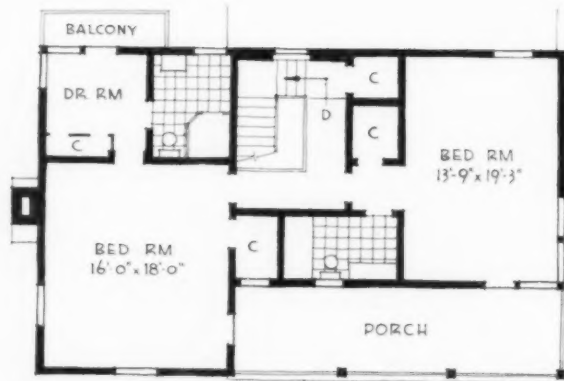


# CALIFORNIA PALOS VERDES ESTATES

Photos by George D. Haight



FIRST FLOOR



SECOND FLOOR

**ARTHUR R. HUTCHASON**  
Architect

PALOS VERDES' Art Jury—composed of practicing architects—named this house the most notable built in the community in 1938. The front of the house faces north and overlooks the bay. As strong prevailing winds come from the west, the garden was designed as a sheltered patio, with the service wing of the house acting as an effective wind wall. Construction is of frame and stucco, with a shingle tile roof. The room at the right of the entrance may be used as either a library or guest room. All main rooms in the house have at least two exposures.





Photos by Leopold



SECOND FLOOR



FIRST FLOOR



T. WORTH JAMISON, JR., Architect



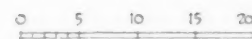
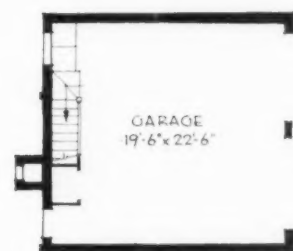
BUILDING TYPES

ARCHITECTURAL RECORD



Walter Steinhard

HOWARD R. MEYER, Architect





JOHN DECKER, Architect



# TELEPHONE INSTALLATION—RESIDENTIAL

ARCHITECTURAL RECORD  
TIME-SEVER  
STANDARDS

NOVEMBER, 1940

Information on this sheet is intended to provide data on equipment sizes and installation practice for residential telephone service. While telephone companies will furnish, install, and maintain complete systems, they do not provide for the concealment of wires or other desirable facilities which of necessity become a permanent part of the building. Therefore, the practices herewith recommended, while not all mandatory, are offered as a means of improving the appearance of the house and assuring uninterrupted service.

Data have been collected and prepared for publication by Ronald Allwork. Information was obtained from American Telephone and Telegraph Co. engineers, and from various publications of the Bell System.

## SERVICE ENTRANCES

Service connections, from a pole or other outside terminal location to a point of entrance (on the house), may be made: (1) by means of overhead exposed wires, or (2) by concealed underground wires.

**Overhead service entrance:** Where it is desirable to avoid exposed wires on the outside of the house, a conduit entrance (see detail) may be provided. This should be located on the side of the building nearest the pole from which the connection will be made, as designated by the local telephone company.

**Underground service entrance:** In cases where home owners wish underground service entrances, the local telephone company should always be consulted regarding construction features and other arrangements. The telephone wires frequently may be placed in the same trench with the electric service, provided suitable separation is maintained in accordance with the provisions of the National Electrical Code and any local requirement that may apply.

**Service conduit,** of a size indicated in Table 1, should conform to the following requirements:

- (1) Material has to be approved rigid iron conduit, with ends reamed.
- (2) Conduit must be securely fastened to building.
- (3) Upper end of conduit requires protection by an approved service head.
- (4) A permanent, effective ground is necessary in accordance with regulations of the National Electrical Code and any local requirements covering the grounding of service conduits.

- (5) A clearance of not less than 6 in. is mandatory between the telephone service conduit and the electric-light service conduit.

## PROTECTOR CABINET

A protector is generally required in residential telephone lines to protect against lightning, etc. When a conduit entrance and interior conduit system are to be installed, it is desirable to provide a cabinet to accommodate the protector. The cabinet consists of a metal box, of the type commonly used in electrical work, located as close to the point of entrance as possible. See table overleaf for sizes.

The protector cabinet should also be located in a clean, dry, ventilated place, at a point where the protector will not be subjected to possible injury. This will usually be in a cellar or basement, but where there is no cellar, the cabinet may be installed in an outside wall. The protector must be accessible at all times. It can not be placed in a transformer vault or near electrical apparatus.

## CONDUIT FOR INTERIOR TELEPHONE WIRES

From the standpoint of the average residence, provision for at least a partial concealment of wires is probably the most important consideration. Insulation, fire stops, termite shields, and modern building materials often make it impossible to hide telephone wires in completed walls and floors by "fishing" them through. Good practice requires that a minimum provision be made for a length of vertical conduit to be run from the basement ceiling to an electrical outlet box near the location where the telephone is to be installed. An individual vertical conduit is preferably run for each additional telephone, unless installations are in adjacent rooms. In this case a single conduit may be increased in size to accommodate additional wires (see Table 2 for sizes). Complete concealment can be accomplished by running conduit from protector cabinet to outlet boxes. For large installations where cable is required, data for determining conduit size can be obtained from the local telephone company.

**Conduit** should be an approved rigid iron type, with ends reamed. When more than two 90° bends are necessary, pull boxes are required so that no section will have more than two such bends. If sections exceed 50 ft. in

length, the next larger size conduit (than that needed for the required number of wires) should be used, or pull boxes may be added so that no section between pull boxes will exceed 50 ft.

## MINIMUM SPACE REQUIREMENTS FOR BOOTHS

When it is required to install the telephone in a closet or special room, a minimum floor area 2 ft. 4 in. square is required. This provides a space equal in size to the usual commercial telephone booth, and permits installing only a built-in shelf-type seat. Minimum size for a closet to accommodate a chair is 3 ft. wide and 2 ft. 9 in. deep. Telephones are best located to right of person entering closet.

Some means of ventilating the closet is desirable since it is assumed that the closet door will normally remain closed. Exhaust should be through the ceiling, or on wall near ceiling. A louver in the bottom panel of the door, or a 1-in. crack between door and saddle, will provide an adequate air supply.

## INTERCOMMUNICATING SYSTEMS

Several types of intercommunicating systems for residences are available from the telephone company. Most of these are extensions of "outside" lines. Types range from the common extension telephone or telephones to complete selective-talking, selective-ringing systems. Since selection of system and its installation vary greatly with each job, it is impossible to present data here. For complete information, consult the local telephone company.

TABLE 1—SERVICE CONDUIT SIZES  
\*(For Overhead Entrance)

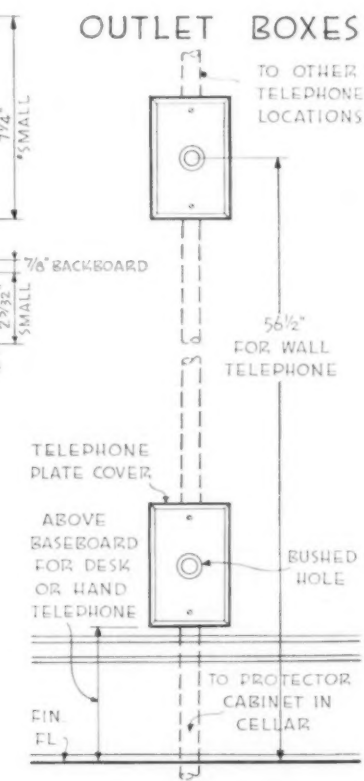
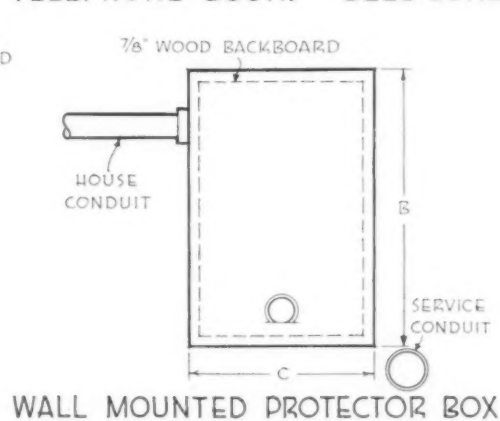
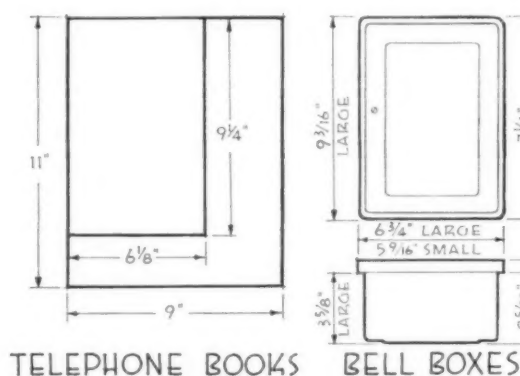
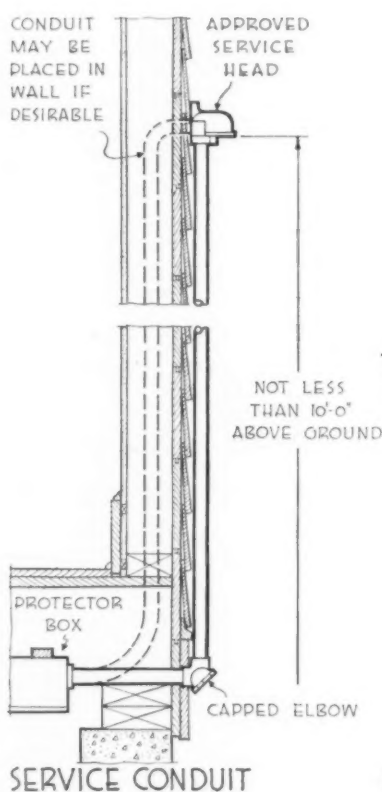
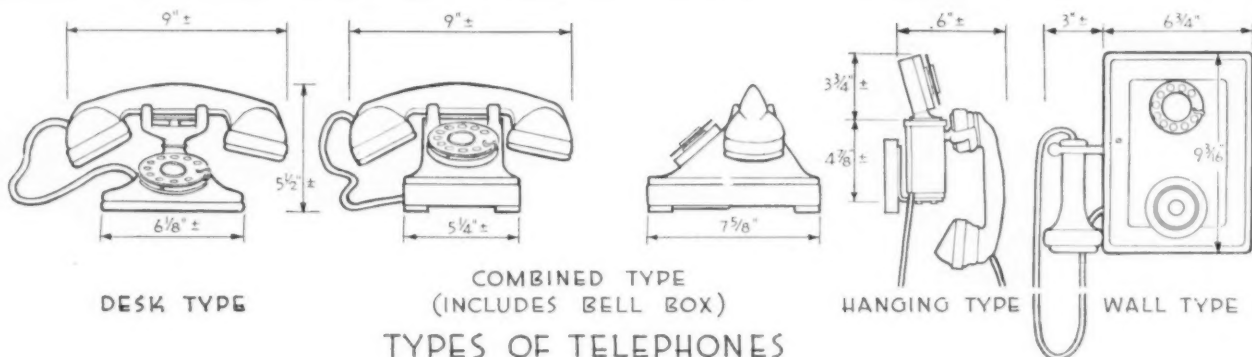
Pairs of Wires	Size of Conduit (I.D.)
1.....	1½"
2.....	¾"
3.....	1"
4.....	1"

TABLE 2—CONDUIT FOR INSIDE WIRES

Pairs of Triple Wire	Size of Conduit (I.D.)
1.....	1½"
2.....	¾"
3.....	¾"
4.....	1"

\*Consult local telephone company for size of underground service conduit.

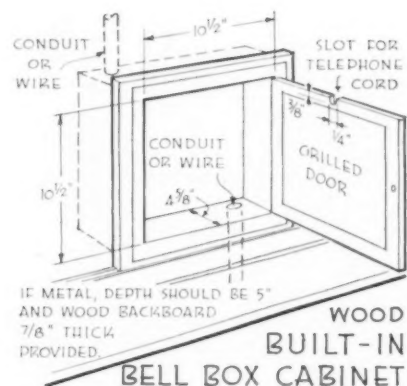
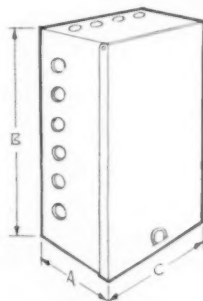
# TELEPHONE INSTALLATION—RESIDENTIAL



SIZE OF PROTECTOR CABINETS			
NUMBER OF PROTECTORS*	A	B	C
1	4"	12"	8"
2	4"	12"	12"
3	4"	12"	16"
4	4"	12"	20"

\*ONE PROTECTOR IS REQUIRED FOR EACH TELEPHONE LINE. IF MORE THAN FOUR LINES ARE REQUIRED THE TELEPHONE COMPANY SHOULD BE CONSULTED IN REGARD TO SIZE OF CABINET.

## PROTECTOR CABINETS



# FLASHINGS—RESIDENTIAL—Windows and Doors

ARCHITECTURAL RECORD  
TIME-SAVER  
STANDARDS  
NOVEMBER, 1940

This Time-Saver Standards sheet presents information on flashings for residences. Sources include publications of the Copper and Brass Research Association and others, as well as architects in private practice. Data were prepared for publication by Ronald Allwork.

## FLASHING AT WINDOWS

**In shingle or clapboard-surfaced** frame walls, window-heads usually require flashing. This should be carried up at least 3 in. on the sheathing, with building paper lapping over it. The manner in which the flashing terminates over trim may vary.

**In stucco-surfaced** frame construction, similar problems are presented.

**In brick-veneer** construction, flashing at head and sill is usually considered good practice; flashing at jambs is often included. In any case all joints between wood trim and brick require caulking with oakum or other compound.

**Window sills** should be provided with

flashing when close to a roof (as in dormers) or where otherwise subjected to extreme conditions. In brick veneer or similar conditions where a double sill is required, or where a wood sill laps a stone sill, a waterbar is usually necessary to present a barrier to water.

**At roof decks**, two piece (cap and base) flashing is required. The base flashing can not be laid directly on the deck boarding, as the felt or canvas will pull away; but rather should be laid between layers of roofing felt, or on top of canvas, as indicated. Horizontal lap of base flashing should extend 6 in. on the roof.

**Dormer windows** which are recessed require flashing construction for top and sides similar to that needed for dormers which are not recessed. The recess deck is flat-seamed, and soldered to the window-flashing strip.

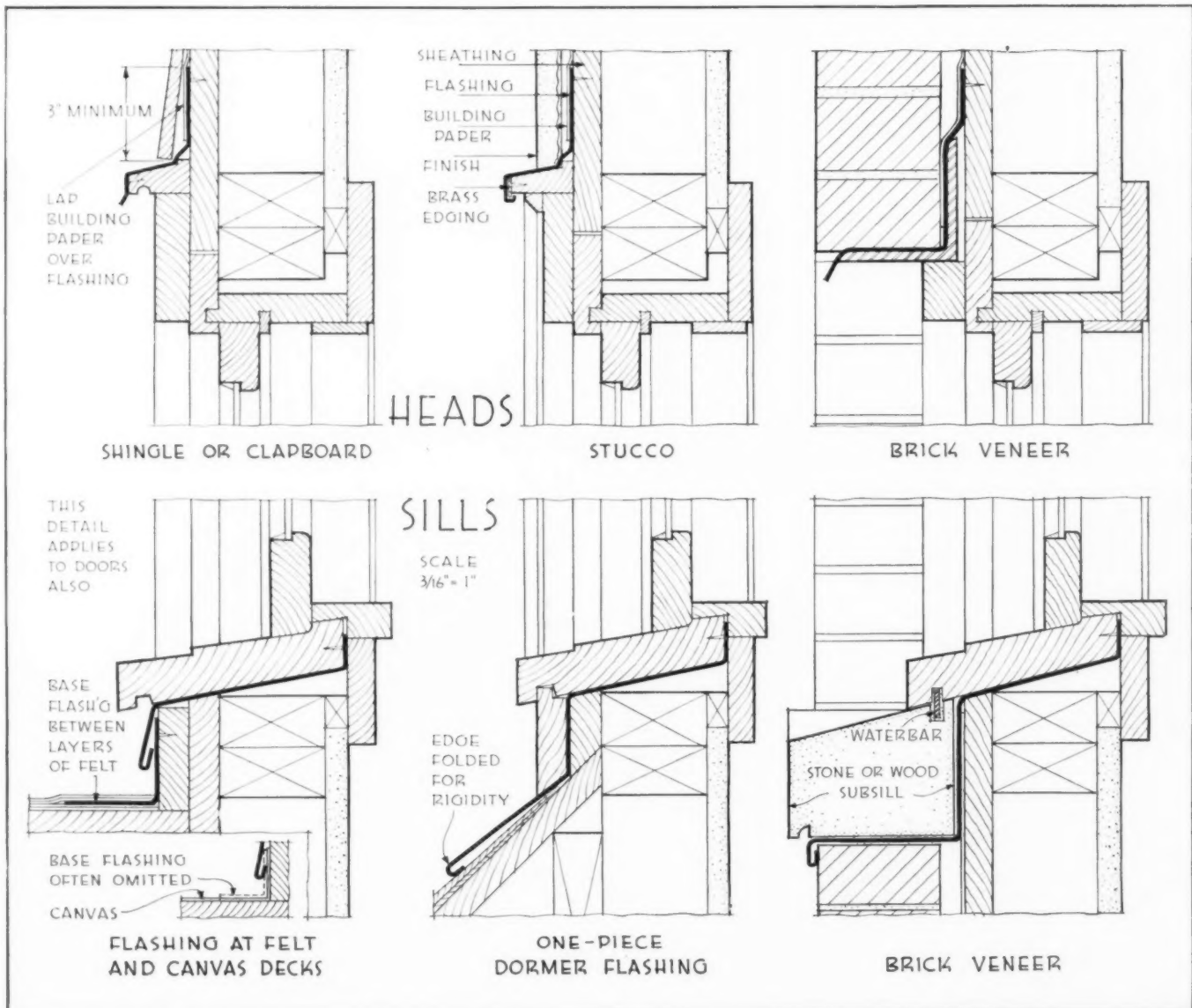
Above the recess, and on dormers without recesses, apron at window is placed immediately above shingles with bottom edge turned back  $\frac{1}{2}$  in. for rigidity. The apron extends out on the

shingles at least 4 in. and is nailed up in back of the siding shingles 4 in. The corner shingle flashings are soldered to the apron with lap seams as indicated. The remainder of the sides are flashed with shingle flashings woven into each shingle course. These flashings should lap each other 3 in., have to be carried at least 4 in. under roofing and siding shingles, and are hooked over the top edges of the roof shingles.

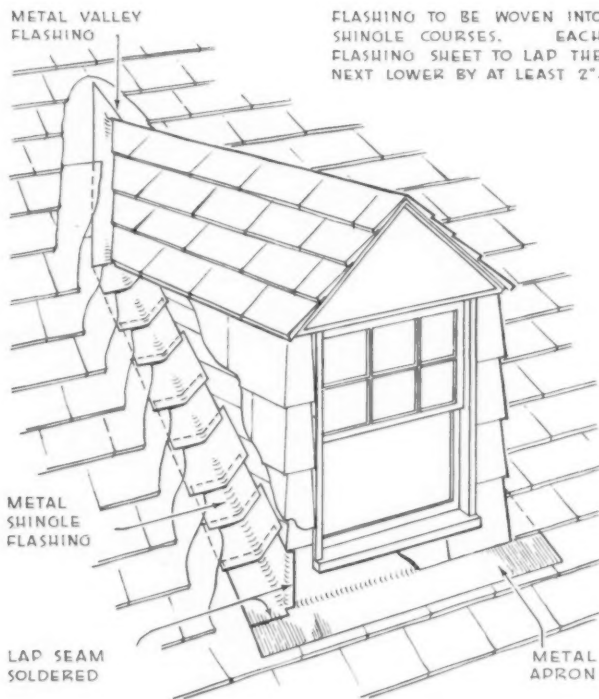
## FLASHING AT DOORS

**In brick walls**, wooden doorways usually require two-piece flashing (cap and base) at the junction of wood and brick. This type permits cap flashing to be built in as the brick work progresses. The wood doorway is not placed until later.

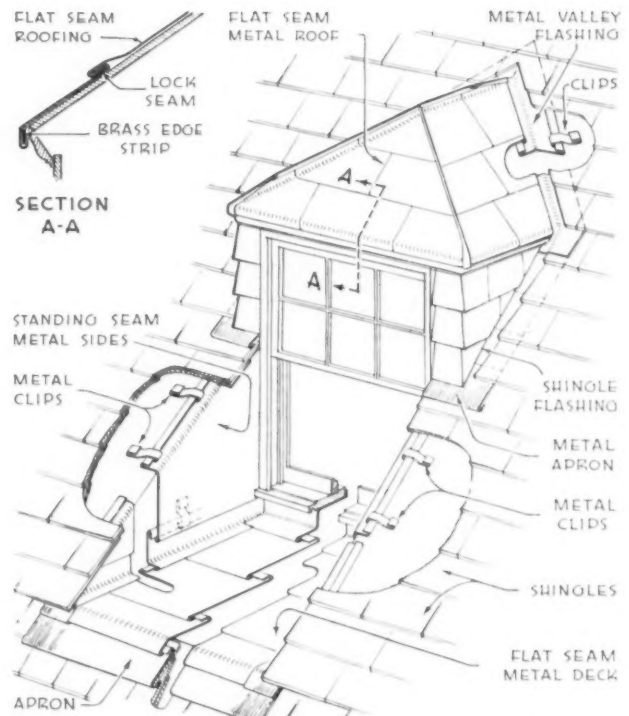
**In stucco construction**, if cornice is narrow and not curved flashing may be single as shown for shingle or clapboard surfacing. When the doorway has a segmental head, two-piece flashing is the only type which is practical.



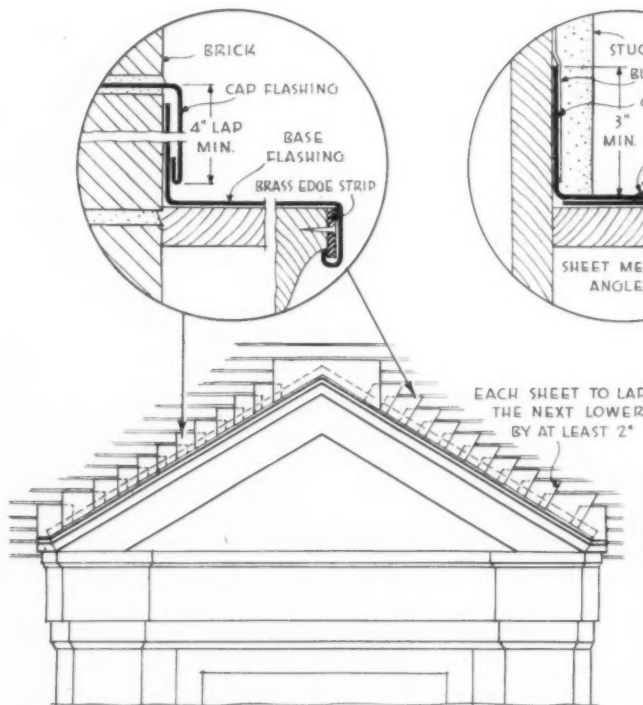
# FLASHINGS—RESIDENTIAL—Windows and Doors



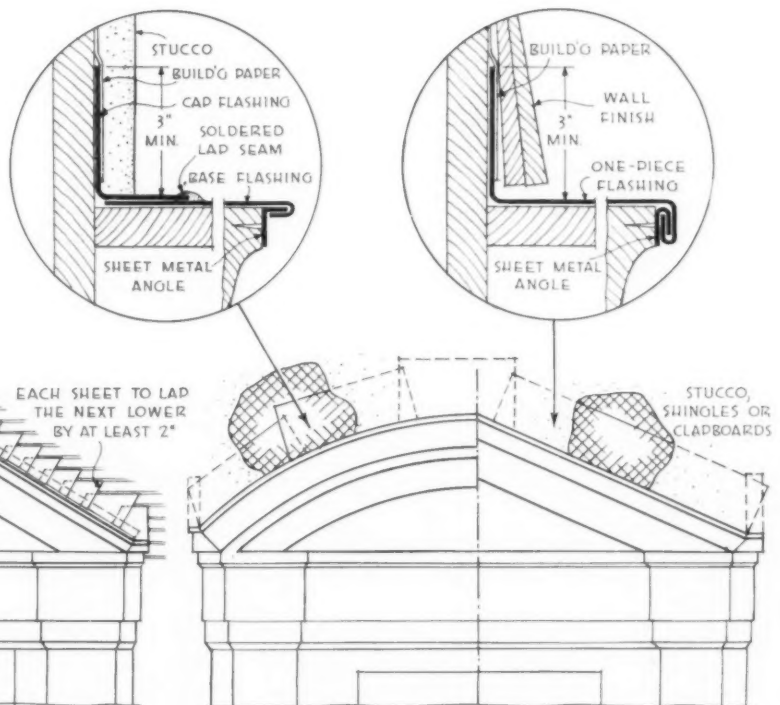
DORMER WINDOW ON SHINGLE ROOF



RECESSED DORMER WINDOW



PEDIMENT FLASHING  
AGAINST BRICK



PEDIMENT FLASHING  
AGAINST FRAME

# FLASHINGS—RESIDENTIAL—Chimneys and Vents

ARCHITECTURAL RECORD  
TIME-SAVER  
STANDARDS  
NOVEMBER 1940

## VENT FLASHING

In tile roofs, flashing of a vent pipe is essentially the same as for a shingle roof. For built-up roofing, horizontal flashing should extend on the roof 6 in. in all directions. It must be placed on several layers of felt, and covered with at least two layers.

On shingle or slate roofs, the lower edge of the base flashing has to overlap the shingles at least 4 in., while the sides and top normally extend 6 in. and are placed under the shingles. The edges of the flashing to the side are folded over  $\frac{1}{2}$  in. to prevent water from driving under the shingles. If the flashing is 12 in. or more in width the lower edge should be turned back on itself  $\frac{1}{2}$  in. to stiffen the metal.

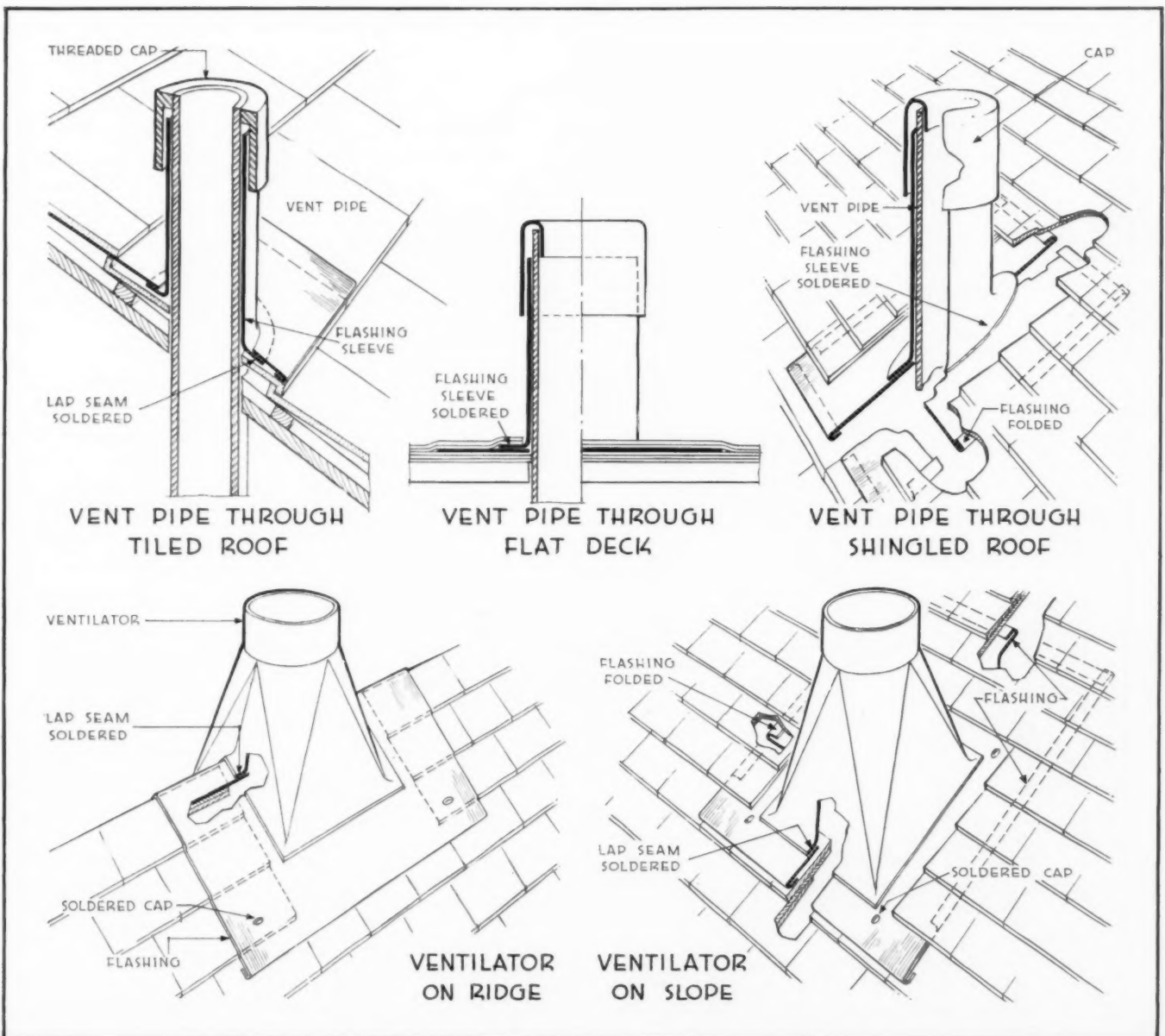
## CHIMNEY FLASHING

On shingle, slate, or flat tile roofs, base flashing extends out on shingles 4 to 6 in. at bottom, with edge turned back on itself  $\frac{1}{2}$  in. for stiffness. Flashing is also carried up the chimney so the cap flashing will lap at least 4 in. over it.

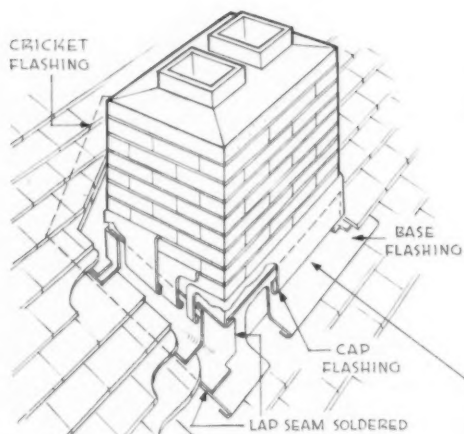
The lowest shingle flashing on each side folds around the corner of the chimney and is soldered to the base flashing. Separate shingle flashings, serving as base flashings up the sides, are inserted with each course of shingles, and are hooked over the top edge of the shingles. Each shingle flashing should lap the one below at least 3 in., and the roofing should lap over the metal 4 in. at the sides.

Base and shingle flashings are cap-

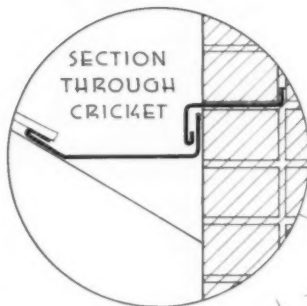
flashed as shown. Along the lower side, where cap flashing is horizontal, it is continuous, but up the sides it is made of separate pieces, stepped as required by the slope of the roof. The separate sheets should have side laps of at least 3 in. and lap the base flashings everywhere at least 4 in. Cap flashings are best inserted as the chimney is constructed, carried all the way through to the inside, and turned up 1 in. against flue linings. If this is not possible, the mason can leave sand courses at joints where the flashings will come. These are easily removed, and the flashings inserted to a depth of at least 2 in. into the brickwork, and secured by lead plugs 1 in. wide and 8 in. apart. Joints are finished with roofing cement.



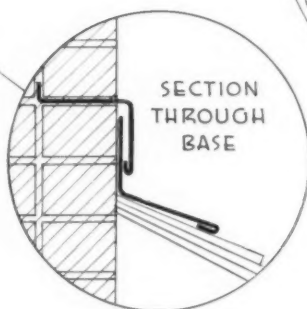
# FLASHINGS—RESIDENTIAL—Chimneys and Vents



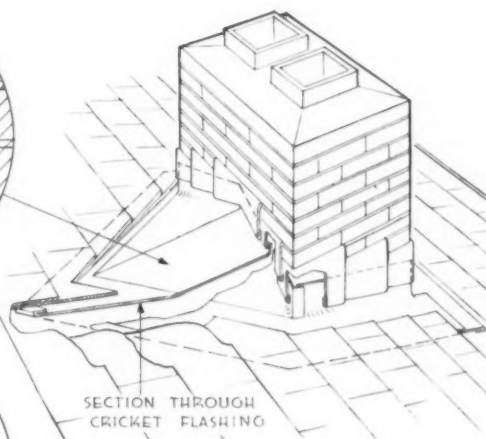
CHIMNEY FLASHING  
ON SHINGLE ROOF



SECTION  
THROUGH  
CRICKET

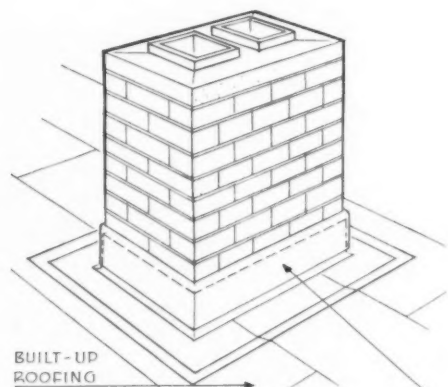


SECTION  
THROUGH  
BASE

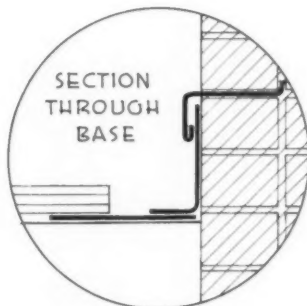


SECTION THROUGH  
CRICKET FLASHING

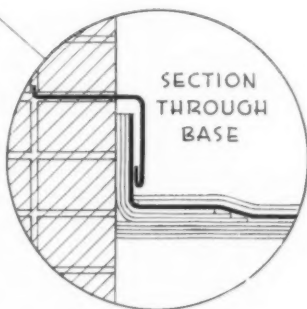
CRICKET FLASHING  
ON SHINGLE ROOF



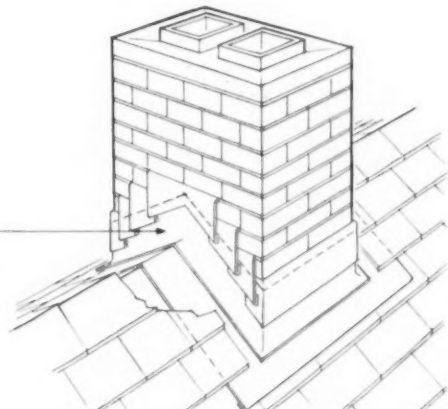
CHIMNEY FLASHING  
ON FLAT DECK



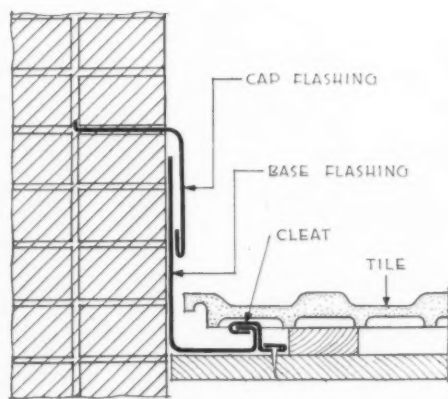
SECTION  
THROUGH  
BASE



SECTION  
THROUGH  
BASE

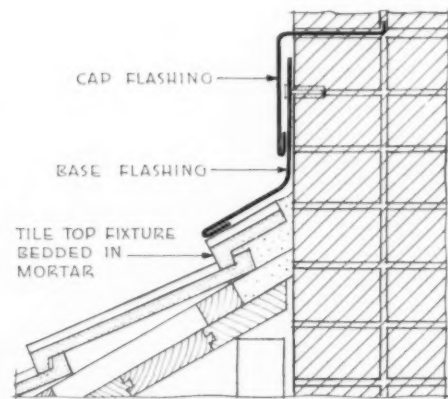


CHIMNEY FLASHING ON  
RIDGE OF SHINGLE ROOF



FLAT ROOF

CHIMNEY FLASHING  
ON TILE ROOF



PITCHED ROOF

In the increasing literature on the subject of defense planning, two general lines of opinion can be observed in formation. One emphasizes the advisability of locating defense projects in existing concentrations of popu-

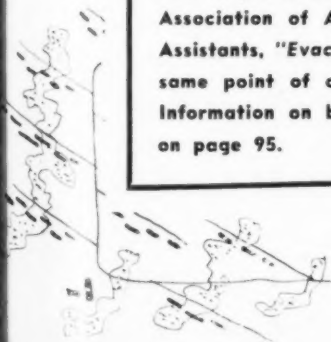
# DEFENSE-TIME PLANNING FOR PEACE-TIME USE

By PERCIVAL GOODMAN

lation; the other advocates the construction of new and decentralized communities; both recognize a necessity for speed. As instruments of national policy, these two are not necessarily mutually exclusive of one another, but the degree to which one or the other should predominate is (correctly) the subject of lively discussion. For, intimately tied up with the question of concentration vs. decentralization of new industry is the problem of which type of planning comes closest to coinciding with peace-time needs; also raised by implication is the parallel problem of heavy vs. light construction methods.

It is precisely around this question of convertibility from war- to peace-time use that the planning problem pivots. Because it represents an interesting exploration of this question, the RECORD this month presents a paper by Mr. Percival Goodman, well-known New York architect.

It will not suffice to say that since the emergency is "temporary," the buildings erected under the program are not important. Experience with the last war—from the "temporary" buildings on the Washington Mall to the last tar-paper industrial village—eloquently disproves this. And to say that there is no time for discussion of such basic planning factors is very like telling a man in danger of being burned to death not to waste time deciding which exit is most likely to save him. It is worth noting in this connection that, just at the moment when England is undergoing its heaviest attack, discussion of long-range planning is coming most sharply to the fore. Thus the Royal Institute of British Architects' recent "Industrial Housing Competition" stresses the need for war-time emergency construction pre-designed for easy conversion to peace-time use. And the latest report of the Association of Architects, Surveyors, and Technical Assistants, "Evacuation: The Under Fives," makes the same point of convertibility for evacuation camps. Information on both of these developments appears on page 95.



A suggested street plan for camouflaging an English town

It is of vital importance to the general future welfare of America that the buildings constructed under the defense program be considered not as temporary but as *permanent additions* to our lives. Such a point of view makes good sense for many reasons. In this place let it suffice to say: that a continuous future state of war or armed defense as a pattern for society is unthinkable; that the danger of actual war on our shores is remote; and that we, as architects, know that any building designed to stand for a few years usually has to stand for many.

The fundamental idea underlying this study is that an analysis of an industrial town under modern war or peace conditions will demonstrate that the requirements of one need not be incompatible with those of the other. The importance of this statement is obvious for if valid such an approach will guarantee to the American people maximum social and economic value for the money and effort to be expended for defense-program architecture with no sacrifice of defense utility.

## The lesson of Europe

The only precedents we have in such problems are those of recent European experience—and this is at once so disastrous yet so dissimilar that mechanical parallels are dangerous. First let us formulate European experience in its starkest terms:

- (1) Any large civilian concentration of population, production, or distribution is dangerous.
- (2) Any military objective that cannot be camouflaged is dangerous.
- (3) Any production or distribution unit whose destruction may bottleneck other units is dangerous.
- (4) Any disorganization in production, distribution, or morale is dangerous.
- (5) The morale of the people is as important as the matériel of the army.

When applied to American conditions, this formulation indicates that any building executed under the defense program should have three values: (1) It must be designed for easy defense in war time. (2) It must be a useful economic unit in peace time, or in a possibly long period of "watchful waiting." (3) It must, whether in war, peace, or in suspense, be designed for human beings.

"Avoid concentrations," says Law 1. This is the antithesis of the skyscraper idea; hence Defense Town is an open town, a town of low ground coverage.

"Camouflage military objectives" (in this case the factory), says Law 2. Very few architects are conversant with camouflage, and as such knowledge is essential to defense program architecture, it is not amiss to give a few rules of the technique. Briefly, these are: (a) any simple or sym-

## PEACE TOWN



## DEFENSE TOWN



R. Standing Rosaf's

**THE FACTORY**, with its powerhouse and administration forming part of it, is a complete, windowless, air-conditioned unit; designed for maximum efficiency, and when required, 24-hour operation. The powerhouse unit is bombproofed; bombproof shelters are provided as part of the factory equipment. The freight yard is excavated into the side of rising ground for reasons of grade as well as future camouflage. Factory is one story, flat roofed, and is approximately 500,000 sq. ft. in area, exclusive of dependencies. The chimney is a stub-stack type (about 40 ft. high), and is set well away from the powerhouse. The water tower is eliminated and pressure tanks are used.

**THE NURSERY** surrounds the factory. Certain of the planting is in tubs and pots. Greenhouses are provided for the growth and study of agricultural products, etc.

**THE LIVING CENTER** composed of one- and two-family houses, with several two or three-story apartment houses (for single people or childless couples) is composed on the "cul-de-sac" plan. The ground coverage is less than 10%. The social and educational centers (not shown in the photographs) form the nucleus of the group. These buildings are not provided with bombproof shelters as the chances of direct hits are too remote. They are, however, provided with cellars which, in addition to their normal

function, give shelter against bomb splinters.

**THE FARM GROUPS** surround the project and are equipped with all basic modern equipment for truck and dairy farming.

**THE CAMOUFLAGE:** The nursery, with its planting of small evergreens, gives the possibility for "natural" camouflage. For defense, wood trellises of irregular forms and heights are built over the freight yard and along the straight sides of the factory. Evergreens in tubs or pots are placed on the trellises, factory roofs, etc. The road leading to the factory is ramped up to a false road on the powerhouse roof, and thence along the false road at the edge of the freight yard. At this point, a roof made to simulate a road is built over the railroad spur and carried to the main line of railroad tracks. This conceals all traffic along the spur line. Any number of other camouflage tricks might have been used in this same location—sodding the roof and placing a few wood cow decoys, makes a pasture—some low shrubbery and some painted wood "tombstones" could even make a graveyard!

The chimney is not camouflaged—this, because of the smoke. It could be camouflaged in its form by paint but the smoke would remain. In time of war, the landscape within a few miles might be dotted with false stacks belching smoke, thus creating the confusion trick.

metrical shape is to be avoided; (b) any volume that casts a long shadow is to be avoided; (c) any shape that cuts across natural topographical contours is to be avoided; (d) *natural camouflage*\* is preferable to even the best artificial camouflage; (e) a camouflaged object must stay camouflaged under any weather or light condition; (f) camouflage has two basic techniques, i. e., the *confusion technique* and the *concealment technique*.†

Defense Town will have a generally unsymmetrical plan following the natural ground contour. The buildings will be low and screened by either existing trees or new planting. No great effort will be made to camouflage any but the important objects in the town: the factory; perhaps the sanitary necessities; the power source; the railroad; the trucking roads, etc. The objects should be so arranged and have forms designed to foster the use of natural camouflage. High chimneys, telltale smoke, water towers, are to be avoided. When seen from the air, neither roads, railroad tracks, nor the buildings themselves should indicate the location of the military objective—the factory.

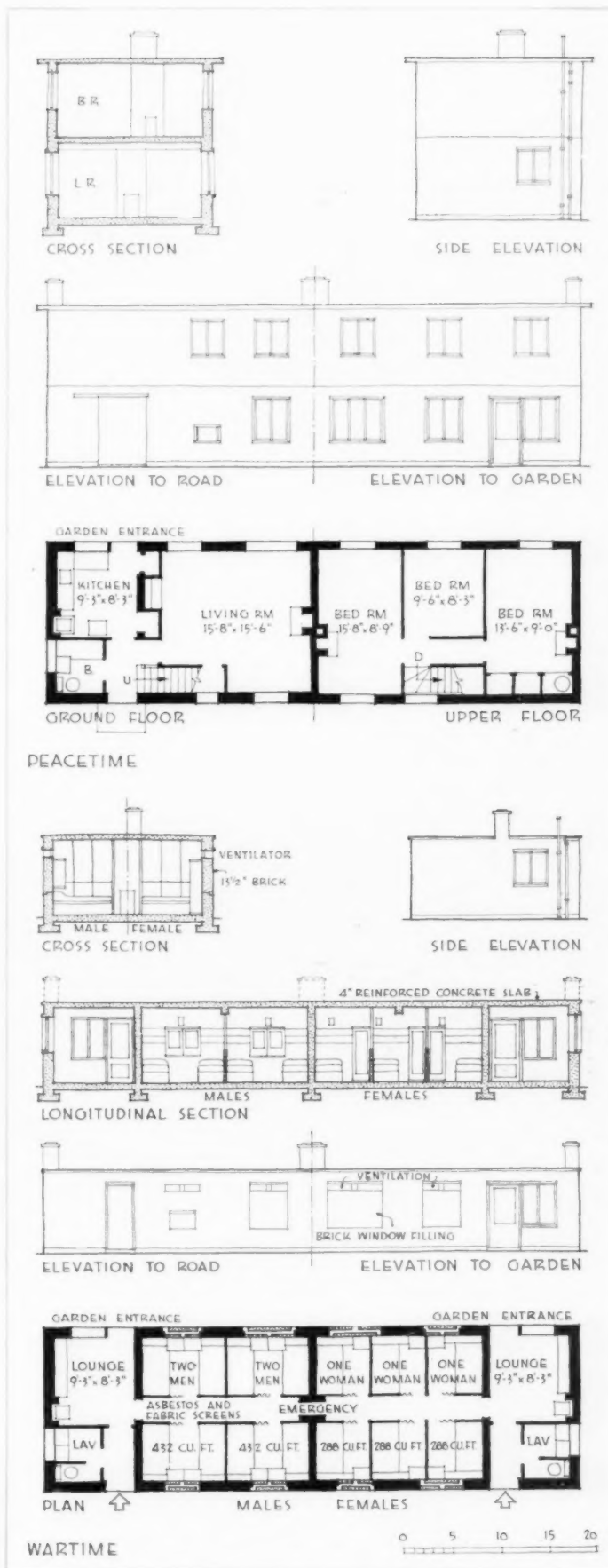
#### Self-contained

"Don't bottleneck," says Law 3. This means that Defense Town's factory shall be as small as efficient operation permits. Thus, if one factory were destroyed, general production flow would not be stopped or even seriously interfered with. Also, "don't be bottlenecked," says Law 3. This means that Defense Town shall be as self-contained as possible. It should have in addition to schools, hospitals, and the like, a sufficient dairy and agricultural development so that in war times, transportation may be freed for military uses and the entire population of the town mobilized—part of the family in the factory, part in the fields.

\*"Natural" camouflage is not only less expensive but immensely more effective than artificial camouflage. The technique consists of using trees, lay of the land, avoidance of rigid shapes, objects casting long shadows, etc. Artificial camouflage with its dependence on painted work, nets, confusion of telltale shadows, etc., is becoming increasingly useless. The perfecting of aerial photography, with its use of telescopic lenses, infra-red film, filters, shows up almost any artificial camouflage to the camera eye.

†The confusion technique is used where an object cannot be concealed and is generally unnecessary in a properly designed (for defense) building. Certain work, however, such as bridges, tall chimneys, water towers, etc., require such treatment as they are often impossible to camouflage. The confusion technique takes several forms: the destruction of outline or volume such as by painting different shaped forms on the original (the "futuristic" effect so prevalent in the last war); the confusion created by imitation and repetition of the real object. For example, if the problem of a factory chimney belching smoke were presented, the technique might be to build a number of imitation factory chimneys scattered over the landscape.

	WARTIME USE.	PEACETIME USE.
I. Mothers	(a) Group billeting in country houses. or (b) Family cottage. or (c) Hostel (i) Separate (ii) Attached to creche.	One-family housing, holiday bungalows, etc.  Terrace housing, Old people's homes, holiday housing, etc.
II. Children (0-2)	* (a) Existing building fitted as a creche. or * (b) Day creche (sleeping with mothers in family cottage units or hostels, etc.)	To serve rural children.
III. Children (2-5)	* (a) Day nursery school (sleeping) (i) group billeting in large houses with foster mothers; (ii) Family units or hostels with mothers. or (b) Residential nursery school. or (c) Group billeting in large premises with necessary structural alterations to form school and dormitory.	New standards for rural population.  Part rural use and town children Homes.
IV. Foster Mothers and Staff	(a) Billeting or group billeting. (b) In family cottage. (c) Hostel (as for mothers). (d) Foster mothers in nursery school dormitory wing.	Rural housing. " "
V. Expectant Mothers	(a) Group billeting in existing houses. or (b) New hostels. (c) Maternity home (existing facilities augmented).	Holiday hostels, etc. Improved standard for rural population.



**CONVERTIBILITY OF DEFENSE PROJECTS TO PEACE-TIME USE:** the subject of an extensive report by the British AASTA on the question of child evacuation, from which the table (left, above) is taken. Meanwhile, the RIBA competition for industrial-dormitory villages—predesigned for future peace-time use—brought forth such proposals as this prize-winning scheme (right, above).

## Order

"Disorganization may mean defeat," says Law 4. This means that Defense Town shall be designed as an entity. Its factory, its housing, its hospitals, its schools, its shopping center, its parks, its playgrounds, its farms and dairies, shall form a simple, easily controlled organism. Defense Town—an entity, a carefully designed cog—carries out its part in the work of the great machine—the Defense Program.

## "The morale of a people"

Echoing President Roosevelt's words, Law 5 reads: "Yes, our mighty defense effort that we are engaged in today, all of us, against all present and potential threats, that effort cannot be measured alone in terms of mathematical increase in the number of soldiers and sailors and guns and tanks and planes. Behind them must stand a united people whose spiritual and moral strength has not been sapped through hunger or want or fear of insecurity. The morale of a people is an essential supplement to their guns and planes."

Translated into town planning and architectural terms, this means that Defense Town's building shall be good building, well designed, carefully planned building. It means that Defense Town shall be provided with the amenities of American life.

## Peace Town

"A town built for industry and healthful living, of a size that makes possible a full measure of social life, but not larger. . . ." so reads part of the official definition\* of the British Garden City. From Ebenezer Howard's first writings to today, town planners have been preaching the benefits of decentralization—space, trees, sunshine; this has been the text used for countless sermons on the subject. Defense Town demands decentralization as the only safe plan against air attack. Peace Town demands decentralization as the sound environment to achieve a normal, tranquil social and family life. Whether the name was Wright (F. L. or Henry), Unwin, Stein, or LeCorbusier, town planners have preached against the type of axially symmetric plan which pastes a preconceived pattern of rigidly geometric streets on the landscape and calls it site planning. The requirements of Defense Town agree with the progressive planner who insists that a town plan should fit into the landscape, who insists that the natural contour of the terrain should be the inspiration for the site plan.

Sociologists have long recommended that a method be found whereby the leisure time of workers (caused either by shortened hours or by seasonal work), can be applied to some productive (but not mass production) outlets such as gardening, dairying, farming, etc. Defense Town seems to demand this and Peace Town can make it a reasonable balance for the mechanization of the factory routine.

Civic-minded people have always argued for a decent, a practical, and a beautiful architecture. The most far-sighted have preached that the town—factory, home, and social milieu—should be one. Defense Town, too, is in agreement with this idea.

## The meeting of opposites

The antithesis of peace is war, but insofar as town planning is concerned, modern defense ways and modern peace ways are not, as we have just attempted to show, antithetical. It is because of this coincidence that the architect, in the

creation of Defense Town, can feel that his work is not of a temporary sort, designed for an ugly emergency which tomorrow will be no more. Contrariwise, the building of Defense Towns—Peace Towns throughout the land may well be the first steps in a new orientation of American urban living, not only toward decent working and living accommodations for Americans, but also the beginnings of regional planning, on a national scale, for American industry.

The various defense bills have already authorized the expenditure of enormous sums of money for building and this is but the beginning. Certainly it is, at least in part, up to the architect to see that this money is spent, not only to suit present emergencies, but also future use.

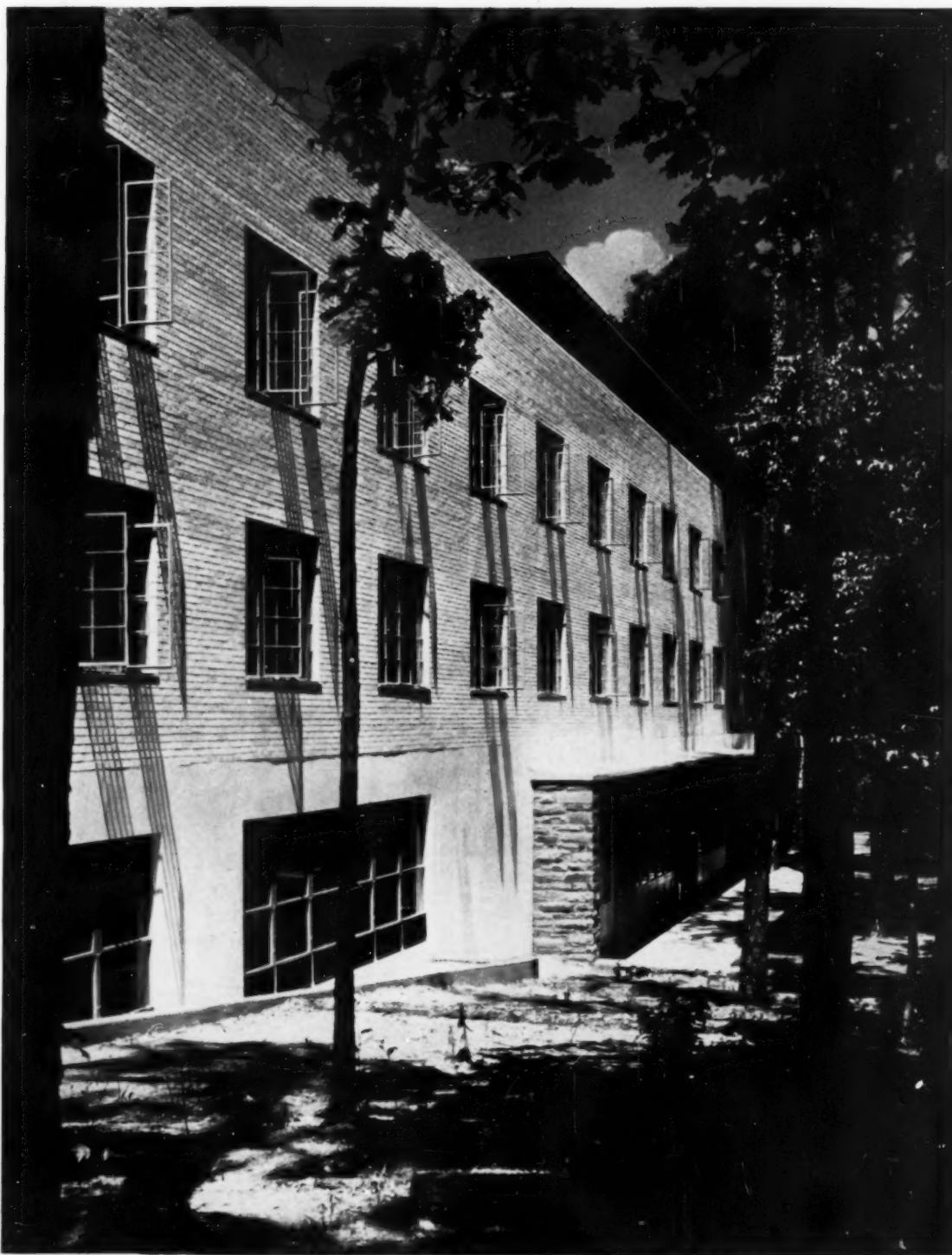
## The alternatives

The alternatives to Defense Town—Peace Town are: (1) company housing in "shanty town." This means doing badly and temporarily everything that Defense Town—Peace Town does well and permanently. Or (2) adding to existing plants or building new plants in existing cities or towns. Naturally, in many cases it would not only be desirable but necessary to do the latter, from the standpoint of both speed and practicability. It is very important, however, in such cases to study the pros and cons, especially in light of the following argument:

Consider the condition of the average town with its economy based on a normal, predictable population increase. Obviously, any sudden expansion in its population will disrupt its normal ways. A factory is to be built for the defense program, requiring the housing of 5,000 workers. Are the good townsfolk delighted with the notion of enlarging their town, increasing business, etc.? With the exception of the few fortunates who may sell the land, they are not. They reason thus: During a year, or a few years, they will reap the benefits of this new business; but the defense program is a temporary measure; suddenly there will be no more defense program and no more business. The sewers, the lighting, the police and fire protection, the streets, and the housing will be there—some nice, new housing for 5,000 people, but no 5,000 people to live in it or pay maintenance for it. Which makes a nice problem for the townsfolk who have increased their budget to care for improvements which they didn't need and now don't want. It is patent that the defense program is not going to build new dwellings on already occupied and more expensive land in the heart of, or in the existing residential districts of the town, but on the contrary will develop cheap and new land on the outskirts, for slum clearance is not part of the defense program. The townsfolk's buildings aren't perhaps brand new, or the best, but they are adequate and they rent. It is clear that the tenants of these buildings will, if the defense buildings are vacated and offered for rent, go to these new buildings. The town, then, will be left with its center paying a much lower tax rate because of depreciated values and well on the way toward becoming a slum. Yet, this center will, of course, represent in services just as much cost as it always has.

This argument is not unconvincing and speaks well for Defense Town—Peace Town from the angle of practical economics. For after all, when the defense program has accomplished its purpose and is no more, the worst that could happen to Defense Town would be that it would become Ghost Town. On the other hand, in the event that an expanding peace economy takes up the slack of the defense boom, it will be necessary to house the expansion in precisely this Peace-Town way—i.e., by a planned decentralization of industry.

\*The British Garden Cities and Town Planning Association.



*Joseph W. Molitor*

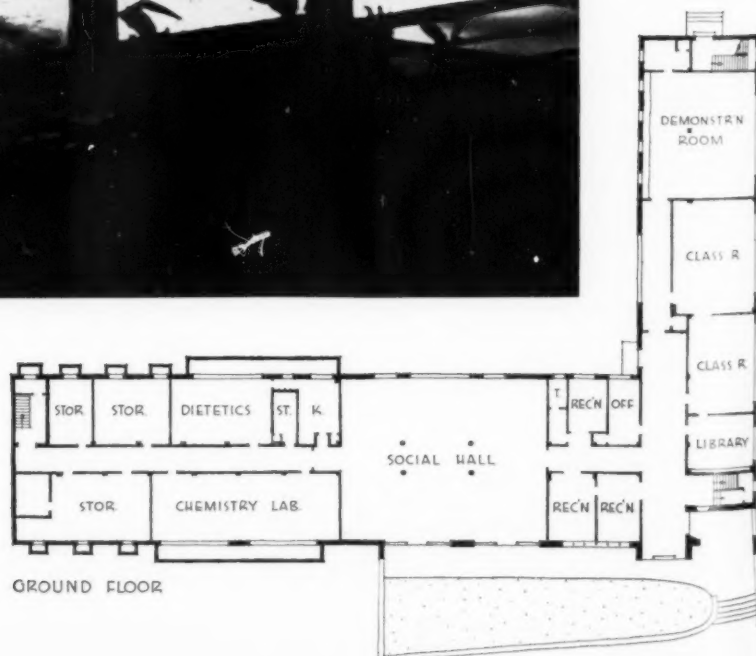


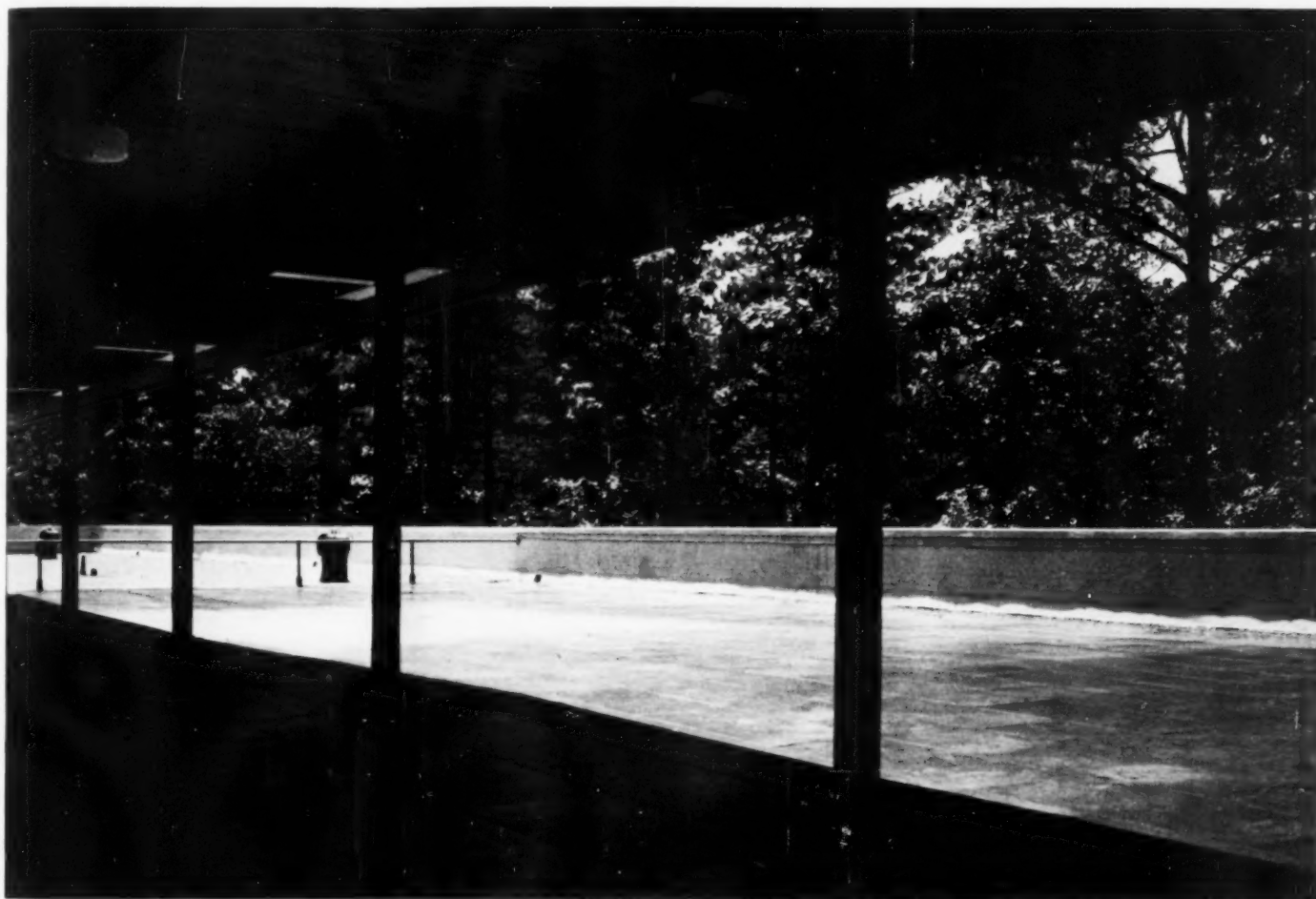
## NEW NURSES' HOME IN CAROLINA

**WILLIAM HENLEY DEITRICK** is the architect of this recent addition to the plant of the Rex Hospital at Raleigh—a straight-forward solution to the problem of providing dwelling and educational facilities for 128 student nurses. It was originally designed as Georgian but estimates were "far in excess of budget allowances"; by a general simplification of design the total cost of the structure was reduced to \$133,000.



The classroom wing seen from the large windows of the first-floor social hall, whose entire opposite wall has glazed doors running from floor to ceiling





The large roof terrace—partially covered—is an important feature for a warm climate.

## REX NURSES' HOME

WILLIAM HENLEY DEITRICK, Architect



LOCATED on the grounds of the main hospital but developed as an independent unit, this new nurses' home in Raleigh, N. C., marks a decided advance in both design and construction over the usual building of this type. The building—designed for nurses in training—provides living and teaching accommodations for a maximum staff of 130, including matron and superintendent. The classrooms are concentrated on the first floor; here also are the smaller parlors and main social hall, which shares a small kitchen for special entertaining with the dietetics laboratory. The two upper floors (identical with two exceptions) are dormitories, with 50 double rooms and 30 single rooms with connecting baths. The roof terrace—important feature for southern climates—is developed for both night and day use.

The building is reinforced concrete framed with brick, stone, and concrete curtain walls.

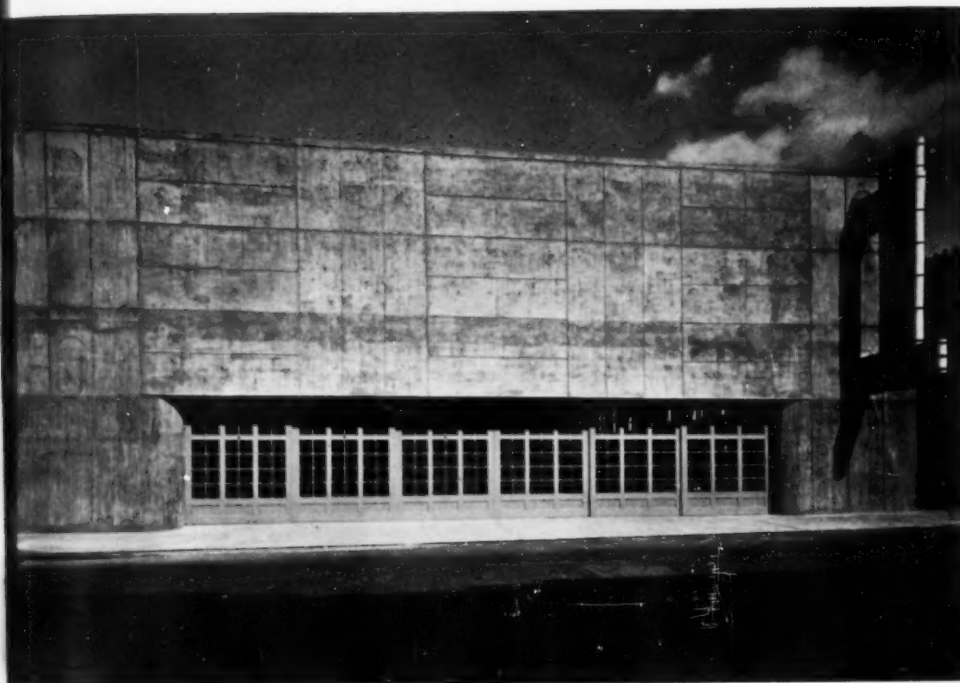
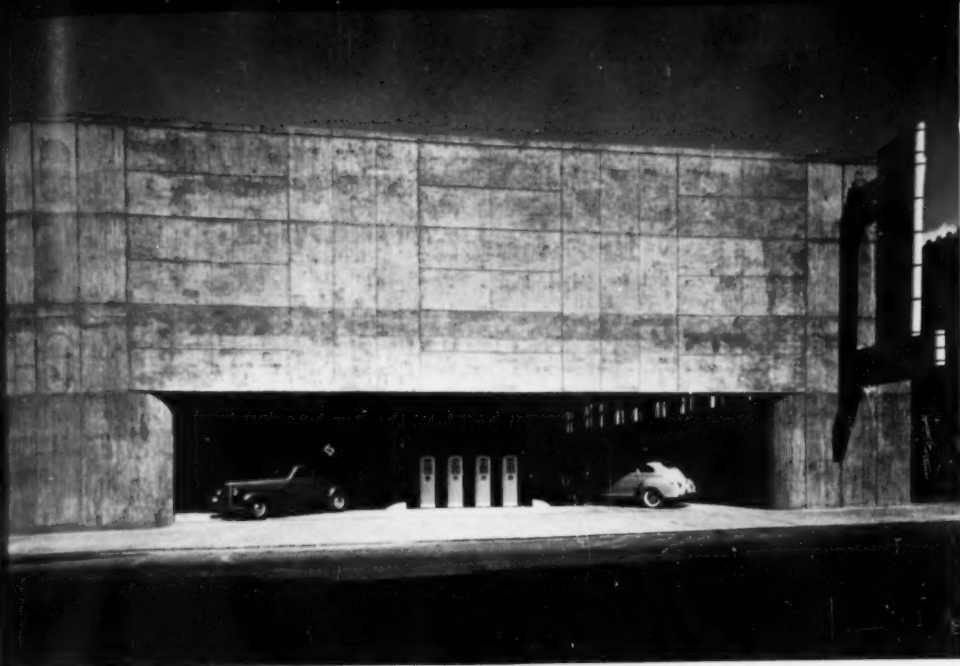
NOVEMBER 1940



The main social hall (above) boasts an entire wall of glass doors which open on the flagged terrace. The main stair at first-level (left) and a typical double bedroom (bottom)



Photos by Joseph W. Molitor



Photos by Thomas Korn Studio

## THEATER-INTO-GARAGE CONVERSION

ROBERT J. BRAECKEL, Architect

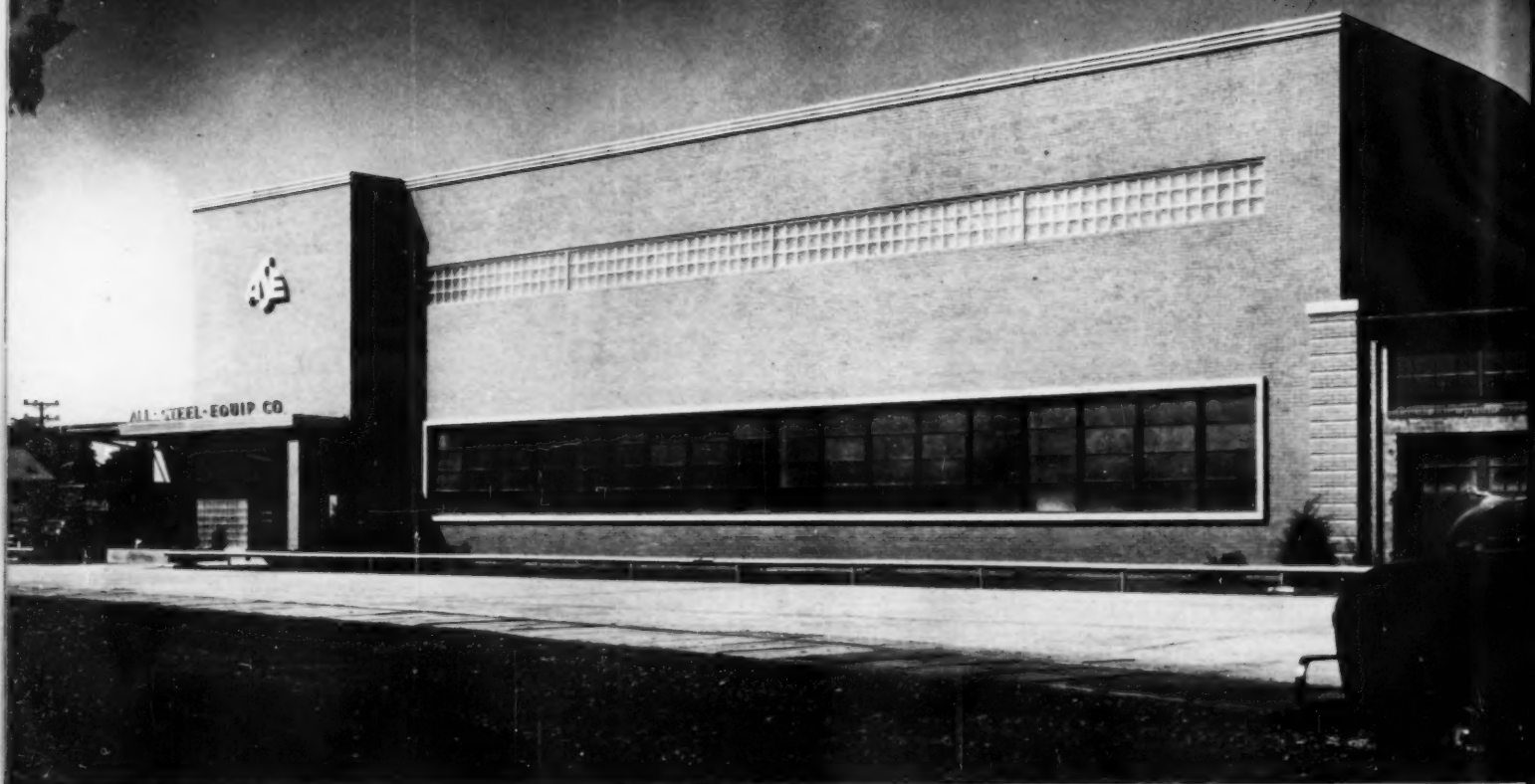
THIS MODERN single-story storage garage in Joplin, Mo., represents a skillful conversion from an abandoned theater. Most interesting feature of the remodeled structure is the use of airplane-hangar type doors, which operate horizontally and independently in such a fashion as to permit 75%

of the entire street front to be opened. Just behind these doors are banked the gas pumps; at the left of them is an office with rest rooms at the right. The rest of the 100 by 120-ft. column-free structure is devoted entirely to storage, since all repair work is handled in another garage, nearby.

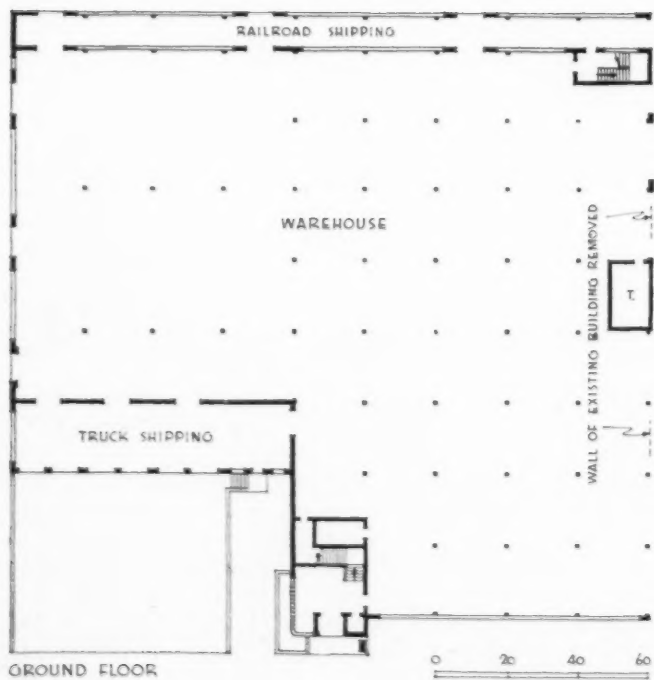


Old theater building before remodeling

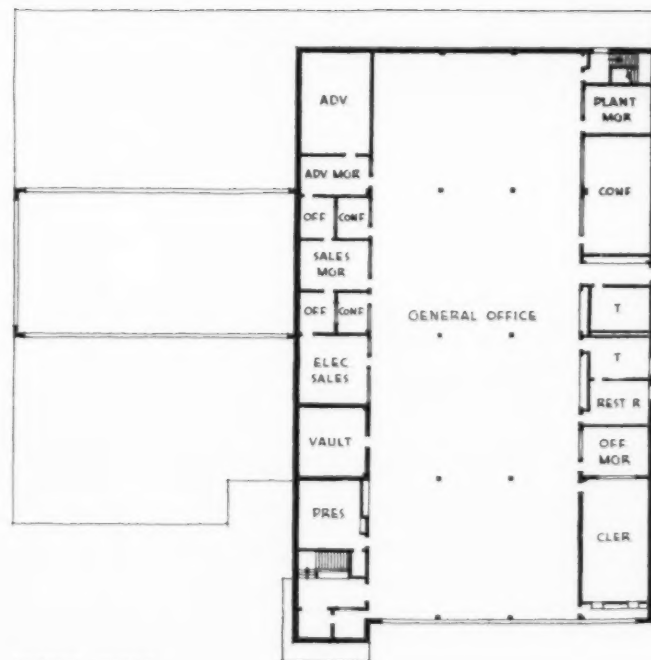
Involved in the reconstruction were: a new monolithic concrete wall along the street front, using corrugated iron forms for surface texture; filling in the former orchestra pit and auditorium ramp; fireproofing the steel roof trusses; plastering all walls and laying new concrete floor slabs.



Photos by Hedrich-Blessing



GROUND FLOOR

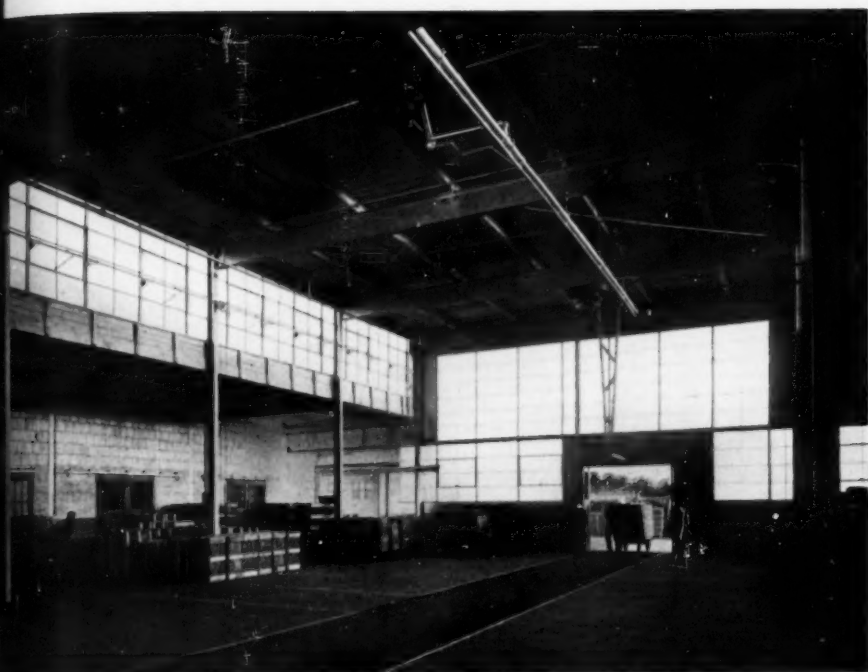


SECOND FLOOR

ARCHITECTURAL RECORD

# NEW INDUSTRIAL BUILDING BOASTS "CONTROLLED CONDITIONS"

THE AUSTIN COMPANY, Designers and Builders



Warehouse (top); trucking shed (center); general view of new building (below)

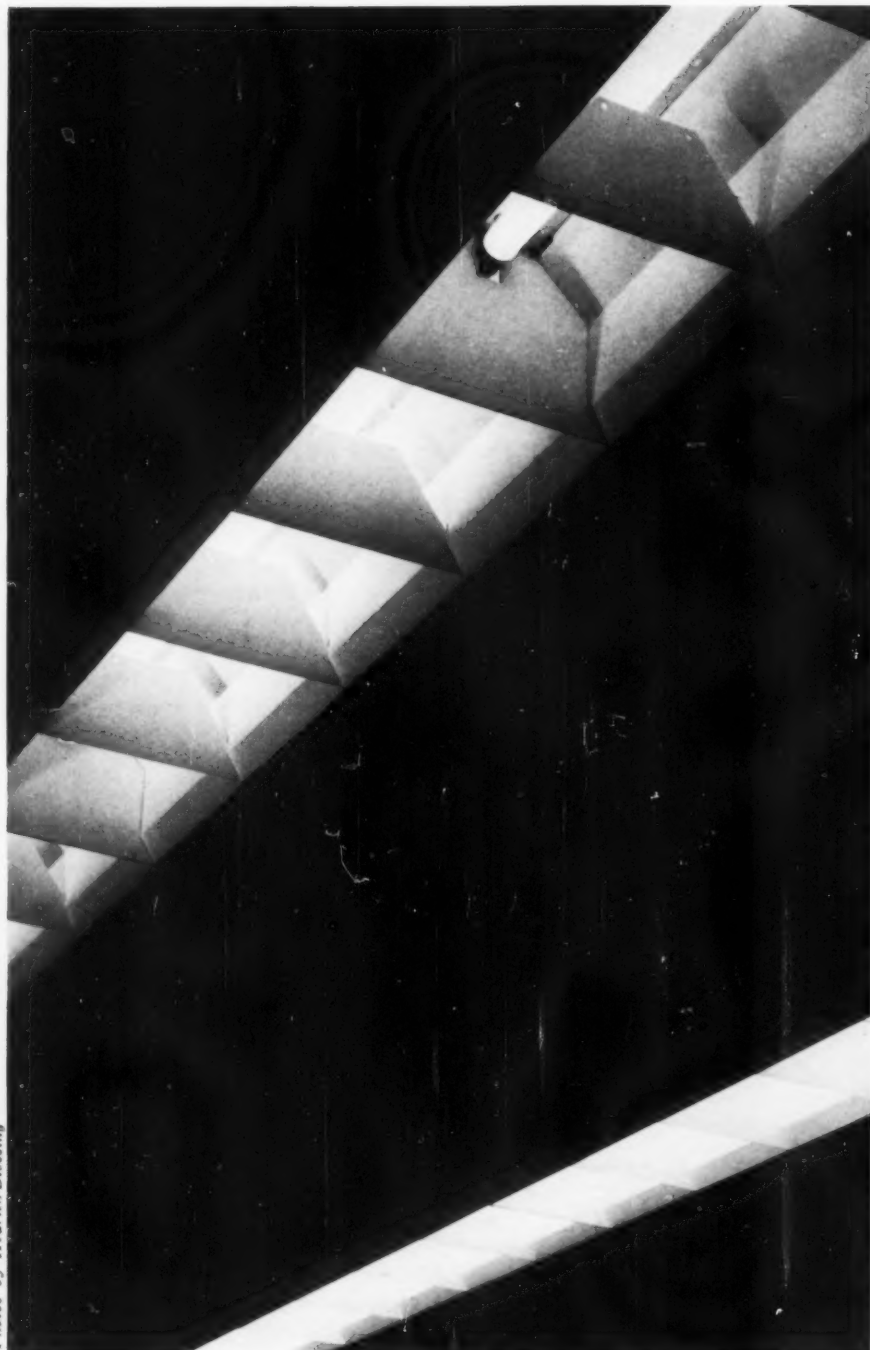
ADJOINING its main plant in Aurora, Ill., are the recently completed general offices of All-Steel-Equip Company, Inc. The 43,000 sq. ft. addition consists of two major units. Modern warehousing, receiving, and shipping facilities are provided for in the first floor, thus liberating a substantial area in the existing plant for manufacturing operations. The company's office force, sales personnel, and executive staff occupy the second floor, comprising 16,000 sq. ft.

Most interesting feature of the new building is the office section where the owners went to unusual lengths in providing optimum lighting, acoustical, and atmospheric conditions for the office section. Using the "windowless" approach—the glass-block panel across the front is largely decorative—the designers have set high performance standards in illumination, air-conditioning, and acoustical control.

The office was so arranged that work could flow with a minimum amount of time and messenger handling—as in the other office features, efficiency was the keynote. The entire office was laid out; every desk for every present employee was accounted for in the plans—and provisions for the expansion of each department were adequately made. With the layout finally agreed upon as the most logical, economical, and most efficient, it will be possible to expand the present force by 25% without any rearrangement of the office, simply by placing the new desks in the places allotted to the future expansion of the various departments. All confusion and unnecessary expense, that are the usual outgrowth of office expansion, are thereby eliminated. Each desk has adequate provisions for proper electrical outlets and connections for telephone installations.

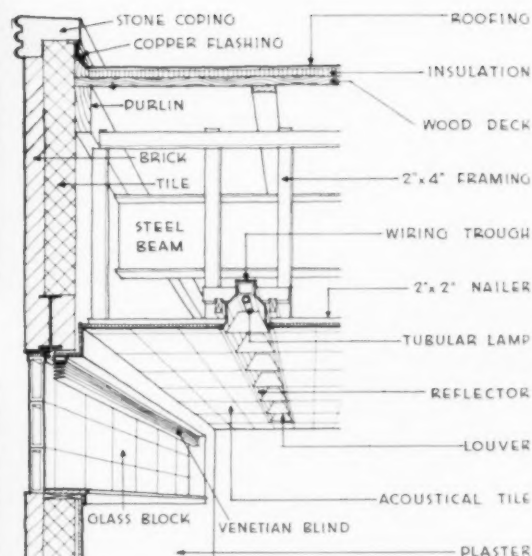
The new warehouse section is so designed in relation to truck and rail facilities as to guarantee smooth and rapid movement of material via either means. Construction is steel frame, with masonry curtain walls.





## NEW INDUSTRIAL BUILDING

THE AUSTIN COMPANY, Designers and Builders



Detail of typical fluorescent light trough and acoustic ceiling used through office area

ONE OF the major requirements was that there be an abundance of light, correctly distributed. The engineering department, for example, needed relatively more light than other departments. Shadows had to be reduced to a minimum by correct diffusion and distribution. A high level of illumination was desired—without wasting light on the ceiling itself. A flush installation was desirable; assembly and installation had to be made as easy as possible; finally, accessibility had to be provided to facilitate cleaning, repairs, or replacement.

Requiring 26,000 watts as installed, this system (see photo and diagram above) of fluorescent tubing totals almost a half-mile in length in the general office alone. The tubing is installed in continuous troughing of special design, jointly developed by the company's own engineers, the Austin Company, and General Electric, and fabricated by All-Steel-Equip.

Average light-meter readings of the finished system range upward from 46 footcandles in the general office, where troughs are spaced 6 ft. 7 in. apart, to 55 footcandles in the transcribing, tabulating, and printing departments, where the troughs are 4 ft. apart. In the engineering and production office, where 5-ft. spacing has been observed, the readings show 61 footcandles. These lighting levels are unusually high.

The offices are completely air conditioned. Cooling is accomplished by a combination of well water and mechanical refrigeration, which together provide 40 tons of refrigeration. The use of fluorescent tubes enables the offices to get along with about 23 tons less refrigeration than would have been required if conventional filament bulbs had been used to obtain the same lighting intensities. All duct work is concealed above the ceiling, where distributors and grilles for the exhaustion of used air



The accounting department (top), filing (center), and drafting department (below)

have been installed flush with the acoustic tile (see facing page).

A comprehensive study was made as to layout, lighting, air conditioning, and interior decoration. By the use of color, plate-glass partitions between general and private offices, and pictorial displays, interest and perspective are provided, creating the effect usually associated with windows. Ceiling height of 11 ft. throughout the general office is 18 in. more than in private offices flanking this area on two sides. This fact, together with reversal of the color scheme applied in the general office, where walls are canary yellow and the ceiling a light green, conveys the feeling of atmospheric space as one looks through glass partitions which separate the private offices from the larger area. All office equipment is the company's own, finished in metallic grey with eggplant linoleum tops. Flooring is a marbled tan asphaltic tile.



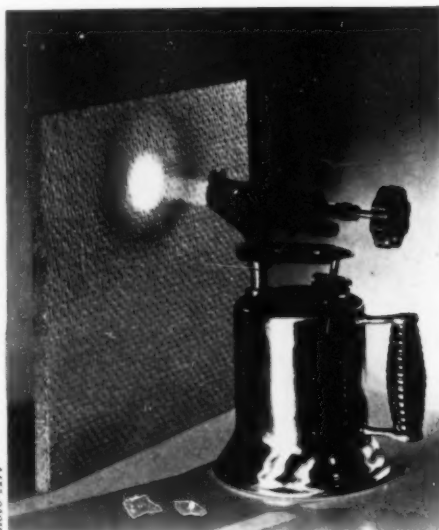


Photo-Art

Figure 1

## New Lath Stops Fire

A FIRE-RETARDANT insulating-board lath that adds greatly to the fire-resistance of ordinary frame walls is composed of wood fibers mixed with expanded flakes of vermiculite. A wood stud wall faced on both sides with the new 1/2-in.-thick boards, covered with poultry wire and gypsum plaster, resisted the spread of fire from one room to another for more than one hour, according to a report by the Underwriters' Laboratories, Inc. A partition, so constructed, also carried its normal superimposed load for the same period. The new lath may be applied in the same manner as other rigid plaster bases. It is recommended for public buildings of all types, schools, apartment houses, office buildings, and isolated homes, farmhouses and other buildings with inadequate fire protection. *Fir-Tex Fire Retardant Insulating-Board Lath*, Fir-Tex Insulating Board Co., Portland, Oreg. (See figure 1).

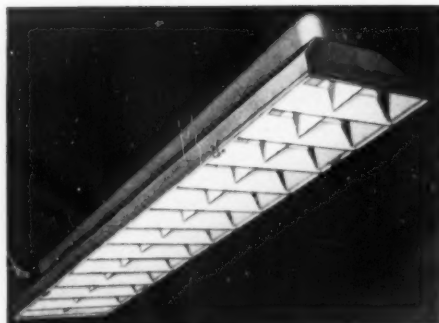


Figure 2

## Egg Crates Reduce Glare

LESS GLARE with fluorescent lighting is provided by a new series of metal louvers for use with fluorescent light fixtures. The louvers are recommended for use in drafting rooms, laboratories, offices, commercial locations, or wherever freedom from glare and eye comfort are desirable. The louvers, with a shielding angle of 23° in all directions, completely hide the light source at all normal angles of vision. Their metal surfaces tend further to diffuse the light striking them; their "egg-crate" patterning has a decorative value for office and commercial installations. The louvers are designed to snap over two- and three-tube fluorescent fixtures made by the same manufacturer. *Lamp-Shielding Louvers*, Benjamin Electric Mfg. Co., Des Plaines, Illinois. (See figure 2).



Figure 3

## Wetter Winter Weather

HIGHER INDOOR winter humidities in houses and offices are achieved by a new humidifier and air filter. Contained in either a metal or walnut cabinet, it measures 16 in. square and 24 in. high; costs less than \$70, F.O.B. Chicago. In addition to automatically controlling the humidity in any room in which it is

used, the unit, it is claimed, also circulates the air at about 150 cu. ft. per min., cleaning and washing it by contact with water-wet surfaces. It absorbs odors and, in addition, can be equipped with a disinfecting or perfuming device. Current consumption is no more than that of a 60-watt electric lamp. *Fairbanks-Morse Humidifier*, Fairbanks, Morse & Co., 600 Michigan Ave., Chicago, Ill. (See figure 3).

## One-Piece Kitchens

A KITCHEN in a package, complete in every respect from cooking to refrigeration equipment and ready to install as a unit, has just been developed for apartment-house use. Manufactured in seven sizes, from 42 in. to 116 in. width, each unit contains an electric range, refrigerator, sink, and cabinet space. All units are available in both left- and right-hand types, as far as door openings, electrical and water supplies are concerned, to permit "back to back" installations in adjoining apartments for the greatest economy in plumbing and wiring installations. Although the units may be used in single-family dwellings, they have been primarily designed for multiple dwellings, where problems of economy, installation, compactness, cleanliness, freedom from fire hazard, flexibility, durability, are of the highest importance. *Packaged Kitchens*, General Electric Co., Bridgeport, Conn.

## Adhesive for Wall Linoleum

BETTER ADHESION for wall linoleum is promised by the manufacturer of a new light-colored, water-repellent, nearly odorless adhesive of the casein-latex type. Its light color gives it a definite advantage in hiding seams, especially with light-colored patterns. It is claimed, too, to have a higher than usual degree of stability before use. It spreads easily; no rolling is necessary. Though water-repellent, it is not waterproof. When used where excessive moisture is encountered, a special rustproof cement should be employed in conjunction with it at seams and edges. *Armstrong's Linowall Cement, S-127*, Armstrong Cork Company, Lancaster, Pa.

(Continued on page 124)

# On the Air ... in National Magazines

## THIS BUILDING PROGRAM IS SELLING

### for You!

75 STATIONS OVER CBS



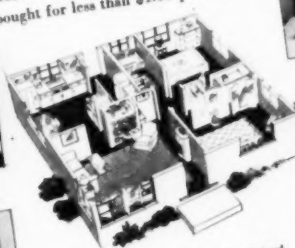
"Design for Happiness"—a half-hour of fine music superbly played ... interspersed by the songs that all Americans love—a program of entertainment for the American home. Brought to you every Sunday afternoon by Libbey-Owens-Ford—a great name in Glass."

In LIFE and GOOD HOUSEKEEPING



Here's a brand-new type of home  
"Designed for Happiness"  
with Glass!

It offers new convenience and sparkling beauty  
—yet can be bought for less than \$1.00 per day.



● This is an entirely new kind of home. It was designed under L. O. F. specifications to bring to the low-income, wage-earner home better convenience, beauty and ease of maintenance—features found only in expensive homes. Look into these homes and you will see they are the most modern, most beautiful and most comfortable yet designed for Happiness—with Glass. They are small, without appearing small. They are inexpensive, sparkling places of luxury about them. For instance, sparkling plate glass mirrors are used everywhere to give increased roominess and convenience; windows are large, well placed, insulated against cold in winter, screened against flies in summer. Despite these and many other luxury features, you can own one of these attractive new homes for less than \$1.00 per month. They are more livable as a home, more valuable and more salable as an investment. To learn all about these homes, to learn how modern use of glass contributes to better building—better living—see your local Libbey-Owens-Ford Glass Distributor. You'll find him listed in the classified section of your telephone book under GLASS. Call on him.

Turn to ... Listen to  
"DESIGN FOR HAPPINESS"  
—your radio program because it will contribute to increased building and remodeling business. Study the advertisements in Life and Good Housekeeping Magazines. Talk to your local L-O-F Glass Distributor. He'll be glad to give you every assistance and the details about this great new building program.

**LIBBEY-OWENS-FORD**  
QUALITY GLASS PRODUCTS

For other suggestions on Use of Glass, write to us and we'll send you our beautiful COLOR GLASS CATALOG—IT'S FREE!  
LIBBEY-OWENS-FORD GLASS COMPANY  
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Here's a big, new radio program devoted to the betterment of the American home, store, and factory—selling the idea that whether you build or remodel, you can do it better by Designing for Happiness with Glass. Here is a program that fosters that deep-rooted desire of most Americans to own a home of their own. It is obviously a program that will help the entire building industry.

Listen to "Design for Happiness." It's your program because it will contribute to increased building and remodeling business. Study the advertisements in Life and Good Housekeeping Magazines. Talk to your local L-O-F Glass Distributor. He'll be glad to give you every assistance and the details about this great new building program.

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## TRENDS IN BRIEF

### HOUSING SHORTAGES IMMINENT

(Continued from page 18)

of 4.8% in the nearly 14,000,000 existing dwelling units in the covered cities.

While this level of vacancy is but slightly below the accepted normal of 5%, the data reveal that in many of the most important industrial areas, vacancies amount to only 1 or 2%, indicating critical shortages. Conversely, some large cities, such as New York, Los Angeles, and Seattle, reported vacancies well above normal, indicating a large capacity to absorb increased defense expansion.

Highest vacancy records were rung up by Florida resort cities, such as Orlando with 11.4%, St. Petersburg with 28.7, and Miami Beach with 36.2, while, in sharp contrast, East Chicago, Ind., and New Britain, Conn., established a low for the entire survey of 0.6%.

But this picture, if anything, is an optimistic one. Actual housing conditions are far more urgent than a first analysis suggests. Not only does the 4.8 figure include all dwellings, both fit and unfit, but it also comprises units held for absent households, those occupied by non-resident families and (in the resort areas particularly) those rented on a seasonal basis only. For these reasons, it is apparent that the present national average is definitely well below the given 4.8%—as low as 3% in the opinion of some real-estate experts.

Taking the percentages, however, as stated in the Census report, only seven states and the District of Columbia show comparatively high average vacancy percentages (5% or more). These states are: Washington, Oregon, California, Oklahoma, Texas, Missouri, and Nebraska. New York State is about evenly divided, with half its representatives showing less than 5% vacancies; half above. Of New England's industrial cities, only Boston with 6.6%, Quincy with 6.3%, and New London with 5.0% show normal or slightly better conditions.

Almost without exception, every other city in the country is face to face with a housing problem that daily grows more serious, although the immediate brunt of it is being felt mostly in the factory centers in Ohio, Indiana, Illinois, Michigan, Wisconsin, Pennsylvania, Iowa, Tennessee, Alabama, and New England. But as our mounting peace and war industries climb into high

gear, and more and more workers are called to the cities, demoralizing tenant jams are bound to develop.

#### "Clearing house" for needed shelter

Best protection against such shortages is a civic "clearing house" committee made up of representatives of the architectural profession, real-estate, building, banking, business, social-work organizations, whose job it should be to anticipate the number of incoming workers; their approximate income levels and family status; to determine how much housing, and what kinds, will be needed.

In a special research report on defense housing, soon to be published by The Twentieth Century Fund, the functions of such a committee are outlined. The plan comprises five main points:

(1) **Vacancy survey**, to determine the present number of vacant dwelling units, with indication of type, size, location, condition, whether available for rent, or for sale, and at what price.

(2) **Room registry**, to list number and description, with prices, of vacant rooms suitable for lodgers; and, where urgent need exists, to induce additional households to offer such rooms for rental.

(3) **Repair and modernization program**, not only listing repairs under way, but making a community effort to induce owners to repair, alter, and remodel existing structures and thus bring additional dwelling units into the market.

(4) **Transportation survey**, studying all local transit facilities, suggesting extensions and improvements to bring available housing in nearby residential and commuting areas within reach of the central defense activity.

(5) **New construction**, listing and describing dwelling units under construction and encouraging additional construction where needed.

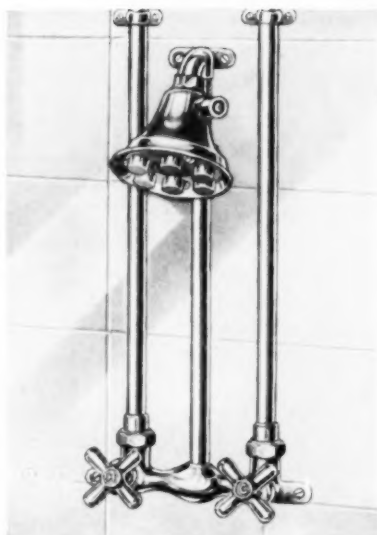
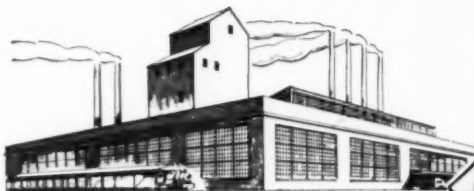
The report suggests certain economies that might serve to hold down costs and increase speed in assembling such information. Figures on house vacancies as given in the census, for example, are based on a door-to-door canvass of every structure in the areas covered. The staff suggests that communities with limited resources might use the sampling method of checking complete city blocks in various sections and applying the averages to the whole community.

(This section continued on page 114)

#### From page 7—

If you were to gather together 1,260,000 U. S. silver dollars and carefully place one on top of the other you'd finally have a pile 8,582½ ft. high—or 32½ ft. taller than seven superimposed Empire State Buildings! This takes a steady hand!

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## TRENDS IN BRIEF

### THE THEATER COMES OF ARCHITECTURAL AGE

New developments in visual and aural control impress functionalism on design

THE THEATER — architectural pleasure girl for Broadway and Hollywood producers—is destined for a more honest career, according to Hal Pereira, architect spokesman for the movie industry.

Terrorized by declining receipts which

mark a dwindling of the Great American Habit, the industry has decided at long last that the day of the baroque temple is past. In its place, Mr. Pereira says, will come theaters in which the comfort of the movie-goer, the acoustics, light-

ing, and other technical appointments will be the criteria of design.

"Many theaters are garnished with unnecessary and incredible color schemes or ancient styles of architecture. Simpler ones, built of fine materials and designed along functional and fundamental lines, are, fortunately, increasing in number.

"Ideal theaters," Mr. Pereira continues, "are those which possess the following attainable characteristics: An auditorium where each seat has been scientifically placed so that it is unnecessary for the patron to bring along a telephone book upon which to sit so that he can see the screen, and where there is sufficient space between the rows so that the patron can get in and out without causing a minor wrestling match or distraction to the unfortunates who are still trying to see the picture and cannot possibly get out of the way by remaining seated or getting to their feet. By the application of a few simple principles, the auditorium can be designed to eliminate the very unsatisfactory seats on the sides at the front. Lighting can be designed so as not to detract from the screen, and to possess characteristics that will improve the exhibition of color pictures, which are being used more extensively.

"The foyer and lobby can be so arranged that the doors, when opened, will not flood the screen with light and obliterate the picture. The shape of the auditorium can be controlled so that it is unnecessary to place so much sound treatment that the sound is unreal. There are a number of very successful and simple relationships between the street and the auditorium which can be followed to secure an easy flow of traffic."

#### Research in ear-appeal

This sudden reviving interest on the West Coast in the mechanics of theater comfort and presentation is not the only indication of a new trend. On the East Coast, a new bulletin, "Research in Sound in the Theater," submitted by Harold Burris-Meyer of the Stevens Institute of Technology in Hoboken, N. J., summates a remarkable series of recent experiments with electrical sound amplification in the theater (See AR 10/39, p. 94).

This report, which describes applica-

(Continued on page 116)

## SURE, IT'S A TOUGH WORLD...



Pulaski High School, Milwaukee, Wis.  
Architect, Guy E. Wiley

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**2. COMFORT.** Finished Terrazzo is *easy to walk on*. It is less slippery than any waxed surface. Furthermore, Terrazzo can save you enough money to acousticate your ceiling, thus giving you a very low noise level.

**3. CLEANLINESS.** Terrazzo can be sealed so as to be practically non-absorbent. Its smooth, jointless surface *cleans easily*... can harbor no accumulation of macroscopic or microscopic germs. It is aseptic.

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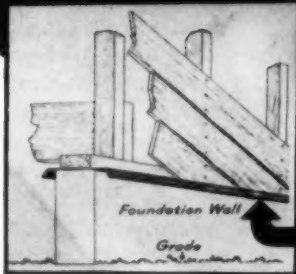
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## THE THEATER COMES OF AGE

(Continued from page 114)

tions of the "Stevens technique" in six theatrical productions during the period of July 1, 1939, to June 30, 1940, may signal the obsolescence of thousands of theaters, both legitimate and cinematic.

Briefly, the Stevens sound-control technique is a means whereby the auditory component of the show is subjected to control as precise as that which is exercised for the visual component. It is an

effort to fix the pitch, quality, density, and distribution of all theatrical sound, and to help develop new sound effects for heightened dramatic expressiveness.

The six productions which employed the Stevens sound-control technique have added considerably to the scope of dramatic expression.

"Madame, Will You Walk?" by Sidney Howard, produced by the Playwright's Company, Ford's Theater, Baltimore, Md., November, 1939, was the first of these. Here, the problem was to provide a celestial orchestra whose music would fill the stage from no apparent

source and on cue fill the house as well with a peak intensity of somewhat in excess of 90 db. The problem was further complicated by the fact that a large orchestra could not be trouped with the show, and recorded music played at high intensity never deceived anyone.

To overcome these, a special apparatus was designed. The composer, Kurt Weil, prepared, orchestrated, and arranged a musical score which did not depend for its significance upon the use of frequencies above 10,000/sec.

A new type of disc record was made available for the production by the National Broadcasting Company. Music was re-recorded, played first over speakers located backstage, then on cue over directional speakers aimed at points on the theater ceiling calculated to "spread" the sound. A circuit was developed to give the recorded music a greatly increased dynamic range over that of the original instruments. The effect produced was entirely lifelike. It marked perhaps the first play in which recorded music sounded like the real thing.

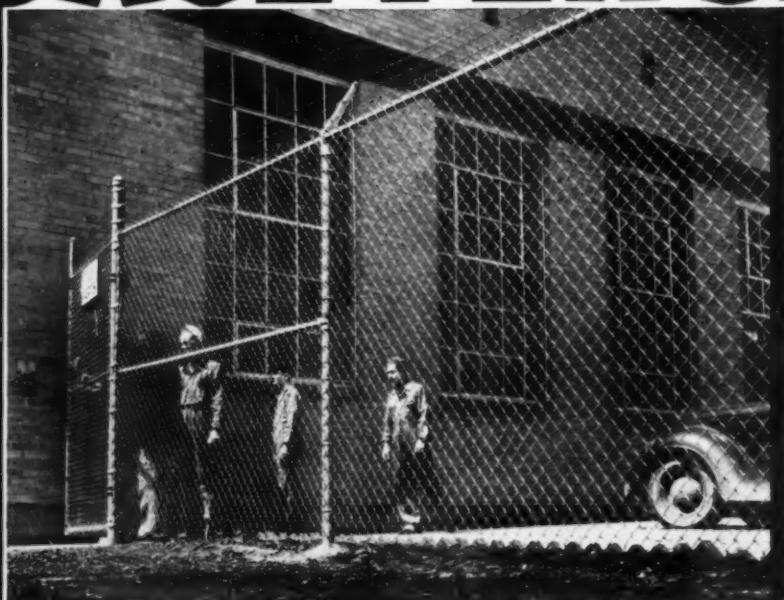
In "Johnny Johnson," by Paul Green, produced at the Stevens Theater, Hoboken, N. J., April 17, 1940, a method of giving separate amplifications to the song from the stage and orchestrated music from the pit was developed. This selectivity made possible the composing of a tonal picture without reference to the actor's lung power or his position on the stage, permitting separate control of volume and quality from both sources.

A third vital, interesting application of new sound forms was developed for "Prometheus," produced by the Yale University Theater. In this case, a score consisting of highly stylized sounds in nature (the sounds of thunder, surf, cow, gadfly, hammer beats, laughter) was prepared to give an unusual musical background to the play—a background that would build up dramatic intensity by means of a rhythmic sympathetic pattern. The sound score, developed by Walter E. Teschan, and played on a Novochord, served to suggest the almost limitless dramatic possibilities for use of arbitrary sound generated and controlled by a keyboard instrument.

The Institute is now studying the behavior of sound in a theater with the audience present to determine the comparative intensity levels of the production and background noise; to measure reverberation; to determine useful frequency ranges. The psychological and physiological reactions of an audience to sound stimuli are also being studied.

(Continued on page 118)

## PAGE FENCE



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Planned Kitchens—has found new ways to make kitchens more livable, yet thoroughly scientific in their equipment and arrangement.

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## THE THEATER COMES OF AGE

(Continued from page 116)

All these data are essential to careful planning of the auditory component of a production and may have considerable influence on the design and operation of amplification and public-address systems as well as devices to control more than the dynamic range of sound.

Much of the Institute's sound research has been conducted in the Stevens thea-

ter. Although no large alterations have been made to help create most favorable acoustic conditions, a number of minor, more expedient changes have been made in its layout. Suggesting provisions which may be considered for theaters now projected, they include: alterations to the back of the balcony to allow for convenient use of control apparatus; alterations to motion-picture projection booth to accommodate new equipment; alterations to the orchestra pit to make possible a greater degree of isolation of the orchestra as a sound source; and the addition of two sound-control booths.



**B**US terminals are busy places—folks coming and going, others waiting for their journey to continue. Floor traffic is heavy. Floor coverings must be able to stand up. Here, as in hundreds of installations throughout the United States, AZROCK, the superior, modern asphalt floor tile, was chosen—its long life durability, its economy, simplicity in cleaning and handsome beauty meeting all requirements.

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## REVIEWS OF CURRENT LITERATURE

(Continued from page 22)

as recreation space. The concrete-slab cellar roof makes a service court between the houses.

**Ardmore Housing Development — Under Protest.** *Business Week*, New York, July 13, 1940, p. 34, illustrated

FRANK LLOYD WRIGHT's house at Ardmore, Pa., designed for convenient, healthy living, has been somewhat less than appreciated by the community. The citizens of this Philadelphia suburb petitioned the town officials, who banned any more houses of this type in the locality. The Zoning Commission has since lifted the ban, and three more are to be built before the year's end. The plan is somewhat like a four-leaf clover; and the kitchen is designed as control room from which the homemaker can supervise children at play in living room or on one of the roof terraces, release the door catch for callers, etc., without extra steps.

**Well-Designed Schools Resist Imperial Valley Quake.** *Architect and Engineer*, San Francisco, July, 1940, pp. 47-49, photos

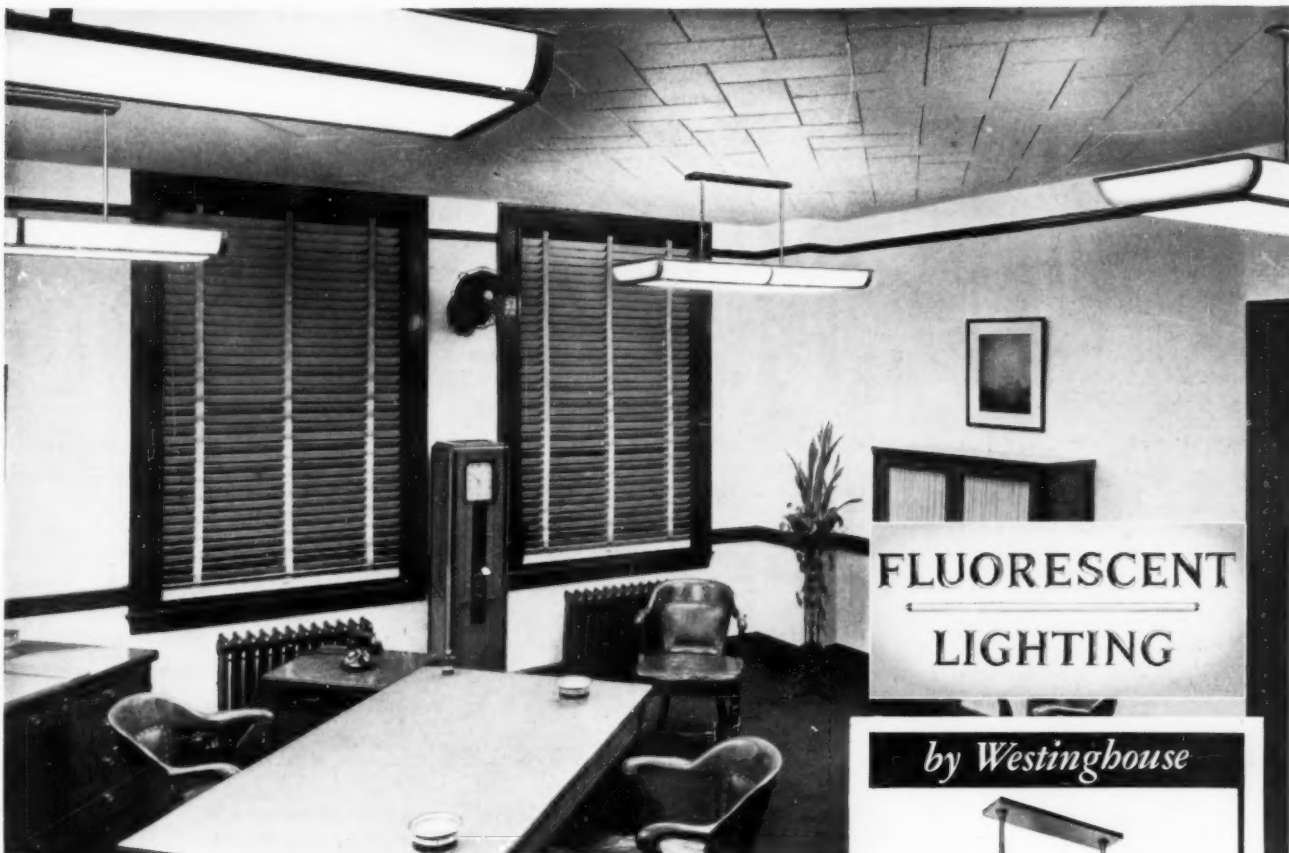
THE EFFECTIVENESS of the recent California State laws regulating public building construction is shown by the fact that not one of the 15 new school buildings under the California State Division of Architecture was damaged in the Imperial Valley earthquake—not even by minor plaster cracks—while schools built before 1933 were shattered. Since that was the 28th destructive earthquake in the state in 100 years, the slight extra cost, estimated at about 2%, of redesigning or strengthening the structural members is well justified. Examination of damaged buildings showed lack of continuity between structural members, vertical supports not rigidly connected to girders, etc.; and this condition was found alike in masonry, frame, and concrete construction.

**Church Heating System Zoned to Heat Only Spaces Immediately Occupied.** *American Artisan*, Sept., 1940, pp. 42-5, 116-7, plans, diagrams, photos

A WARM-AIR distributing system so zoned that without heating the entire building, areas in use can be heated by a system unusually complex for small buildings. Each zone—main auditorium, basement assembly hall, small rooms and balcony, etc.—has its own thermostat. "Also return air from each zone is brought back

(Continued on page 120)

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*50 Per Cent Cooler Light*—permitting much closer placement of the fixture to the job; important in air conditioning.

The Type CL-160 Commercial Luminaire is available with either plain or decorated glass bottom, or with louver instead of glass. With louver, it provides more direct light, while the glass basins create semi-direct illumination.

Continuous Strip Lighting—for halls, general offices stenographic and drafting rooms—is available in the Type CL-40 fixture in one or two lamp lengths. By using extension sections, continuous runs may be easily installed. This Luminaire is available only for ceiling mounting.

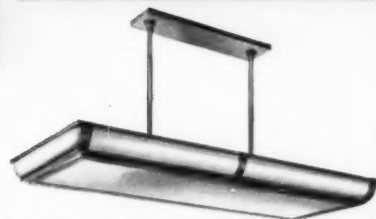
Another popular Westinghouse Fluorescent Luminaire is the three-lamp CL-110, which is furnished with or without glass diffusing shield as a combination indirect-direct unit or, without the top lamp, as a direct source of illumination. This fixture is also available for surface mounting.

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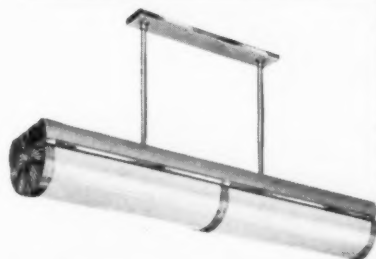
Tune in "Musical Americana," N. B. C. Red Network, Coast-to-Coast, every Thursday evening.

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by Westinghouse



The Westinghouse CL-160 Fluorescent Luminaire with ribbed or decorated glass bottom panel.



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# Westinghouse

## FLUORESCENT LIGHTING



## REVIEWS OF CURRENT LITERATURE

(Continued from page 108)

to the furnace room separately, and at the blower a damper in each return line functions automatically with the warm-air zone damper, or can be opened or closed manually for summer ventilation." The system met all demands last winter, and during the summer the ventilation system had good success—one zone or more being opened as needed and the full capacity of the blower used for quick change of air.

**Concrete Grid Forms for Building Construction.** Architect and Engineer, San Francisco, Sept., 1940, pp. 50-1, illustrated

THE CONCRETE GRID form is an assembly of two plywood panels in which is a series of openings. Panels are assembled in one unit or cabinet by placing metal sleeves through the openings which serve as cross ties and spacers. The sleeves are adjusted to construct walls from 3 to 8 in. thick. Steel is placed as required, and the concrete then poured. The apertures in the grid wall provide dead-air space amounting to about 54% of the wall area. The insulating value of the wall is increased by using lightweight aggregate in the concrete mix.

This also reduces weight by 33%. Nails may be driven, thus facilitating the use of stucco netting for wall finish. The assembly cabinet saves 40-50% of the concrete volume, reduces dead weight by 32%, with gain in economy, strength, and durability. The concrete is poured at the site.

**Semipermanent Jointing Systems.** By R. Cotterell Butler. *The Builder*, London, June 28 and July 12, 1940, illustrated

TWO ARTICLES, forming nos. 22 and 23 in the series "War-Time Building Practice" treat of methods of jointing building components to facilitate dismantling and reassembly—frames, panels for roof, wall panels, sheet material, and dense block materials. Clear diagrams illustrate various structural frame jointing, such as heavy members bedded in mastic and bolted, light members rag-bolted on fiber cushions, rag-bolt and mastic joint, grout joint, etc.

**Architectural Models.** By G. A. Jester. *Industrial Arts and Vocational Education*, Milwaukee, Oct., 1940, v. 29, pp. 234-236, illustrated

ADDRESSED TO BEGINNERS in model making, this article offers information useful to all but the professional model maker. Workableness and durability of

various materials are discussed: balsam wood, basswood, patternmakers' pine, whitewood, cardboard, illustration board, etc. There are many suggestions as to the easiest way of obtaining desired effects.

**Criticism. (Monthly series).** By James MacQuedy. *Architectural Review*, London, July, 1940, pp. 27-9, illustrated

IN AN AGE of such financial instability as ours we cannot rely on the constant repainting with expensive paint that stucco demands. Also, "we still do not know enough about the surface behavior of concrete in all its forms and under all conditions." This short article well illustrates combined use of concrete and traditional materials, to enable the latter to perform new tasks—concrete lintels facilitating wider spans in a brick wall; stone used for a wall in which no large openings are required, while on the windowed side of the same building a concrete wall "takes its character from the void rather than from the solid"; the Gropius and Breuer use of local materials in a traditional way in a Massachusetts house with a solid stone base, a boarded upper story, both happily combined with a cantilevered concrete outside stair.



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